

Standardization

News Magazine of the American Standards Association, Incorporated

Golden Jubilee of British Standards (page 244)

Protection for Chiquita Banana . . . (page 237)

AUGUST

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Company Members—More than 2000 companies hold membership either directly or by group arrangement through their respective trade associations.

Marginal Notes

A World's Fair Baby—Intrigued by the story of new standards for fluorescent lamps (see Howard Berka's article, page 250), we inquired how widely this relatively new type of lamp is now used. We turned up what seems to us to be an interesting story.

In April 1938, Samuel E. Hibben (Westinghouse) and Ward Harrison (General Electric) jointly presented a paper before the highly exclusive organization of scientists known as the New York Electrical Society. The paper told of a new type of lamp which produced light by means of an electric discharge rather than through a heated filament. Through a complicated series of reactions this electric discharge, taking place in a gaseous atmosphere, gives off invisible ultraviolet energy which, through further complicated reactions, gives off invisible light.

The revolutionary new electric discharge lamp aroused the interest of Bassett Jones and his World's Fair Lighting Committee. The lamp was not yet ready for release to the public, but Mr. Jones' eloquence and determination persuaded the manufacturers to permit its use for the first time at the World's Fair. The public that flocked to both the New York Fair and the California Fair enthusiastically called for the new lamp; before the end of the year it was made available on a commercial basis.

In 1938, 250,000 fluorescent lamps were sold. In 1939, the number had jumped to 1,750,000; by 1950, it had increased to 88 million.

First to buy the new type of lamp in quantity were the retail stores; during the war, factories took their place as the largest users. Practically every war plant built from 1941 through the end of World War II was equipped with fluorescent lighting. Again, today, factories working on defense production are being equipped with fluorescent lamps. Now, too, schools are more and more

joining the ranks of fluorescent lamp users.

Commenting on the new American Standards for fluorescent lamps, E. W. Beggs, Westinghouse Electric Corporation, says:

"If we are really going to have the great fluorescent lamp market we dream of, it will be more and more necessary to maintain interchangeability through the American Standards Association. It helps a lot to know there is a central place in the United States where any lamp manufacturer and any fixture manufacturer can go to check on what the dimensions and electrical characteristics of his equipment should be for interchangeability. These standards represent a synthesis of the ideas and work of practically everyone in the business."



The symbol of the Festival of Britain, 1951 shows the head of Britannia surmounting the star of the compass.

Our Front Cover

Some think of London as the Thames, Big Ben, and the Parliament buildings . . . Others remember the soft, mysterious fog. Our cover captures all these things as a reminder of the work the British Standards Institution has done and is doing in the field of Standardization. The BSI culminated 50 years of service in June of this year with a Jubilee celebration. The ASA is happy to congratulate the Institution—we presented fraternal greetings at the Jubilee celebration. Page 246. *Courtesy of British Information Services.*

Opinions expressed by authors in STANDARDIZATION are not necessarily those of the American Standards Association.

Vol. 22 No. 8 **Standardization** August 1951

Formerly Industrial Standardization

Published Monthly by **AMERICAN STANDARDS ASSOCIATION**
INCORPORATED 70 E. 45th St., N. Y. 17

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

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Reg. U. S. Pat. Off.

Ruth E. Mason, Editor

Margaret Chamorel, Production Editor

Single copy, 35¢. \$4.00 per year (foreign \$5.00). Schools and libraries \$3.00 (foreign \$4.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 11, 1949, at the P.O., New York, N. Y., under the Act of March 3, 1879.



United Fruit Co

The banana plant was carried centuries ago from the Middle East through Southern Asia and India to the western Pacific Islands. In the 16th century, the plant was carried by a Spanish priest from the Canary Islands to Santo Domingo and later to Panama. First bananas were introduced from Cuba

into the U. S. early in the 19th century. In 1872, a steamer shipment of bananas to New Orleans numbered 250 bunches. Today, one cargo totals from 45,000 to 85,000 bunches.

Protection for "Chiquita Banana"

Chiquita Banana daily warns "do not put bananas in the refrigerator." However, it is careful refrigeration of cargo space on shipboard that makes it possible to bring bananas to market in good condition.

Prepared with the cooperation of W. L. Keller, United Fruit Company, Chairman of ASA Committee B59; A. R. Gatewood, American Bureau of Shipping; and R. A. Smyth, Captain, U. S. Coast Guard.



YOU and I, shopping at our neighborhood grocery, take for granted the variety of bananas, pineapple, and other tropical fruit on display there. Few of us realize the drama of standards that has been taking place during the past few years to assure that these products from other countries reach us in good condition.

The drama centered around the refrigerating equipment used on shipboard to preserve perishable cargoes and ships stores. It culminated late last year in approval of an American Standard Recommended Practice for Mechanical Refrigeration Installations on Shipboard.¹

Use of refrigerating equipment on ships is comparatively recent—only a moment in time when compared to the long history of commercial shipping. When World War II started, the two guardians of safety in the shipping industry—the Coast Guard and the American Bureau of Shipping—had requirements only for ammonia and carbon dioxide refrigeration equipment, as the newer refrigerants, such as Freon-12, had not previously been widely used on shipboard.

Possibly the problem would not have been so acute if World War II had not brought many new companies into the shipbuilding business and had not placed speed of building at a premium. The old line

companies were used to working with the Coast Guard and the American Bureau of Shipping. Given time, they could have worked out satisfactory up-to-date requirements with them.

But with no codified requirements for the newer refrigerants at hand and with the Government clamoring demanded that safety requirements be worked out on a sound basis, with consideration for the problems and viewpoints of all concerned—and that these safety requirements be made available for the benefit of all.

It is an urgent matter to a shipbuilder or ship owner to know what equipment will pass inspection. No ship can sail unless it is cleared by the Coast Guard as meeting the necessary requirements for safety to life. And the owner of a cargo would hesitate to entrust his perishable goods to any vessel not noted as Classed in the American Bureau of Shipping's *Record*. The Bureau's "RMC" certificate indicates that the ship owner has used due diligence in handling his refrigerated cargo. This shows that the ship's refrigeration equipment is regularly inspected and maintained, guaranteeing that it will operate effectively throughout the voyage regardless of the strains placed on it by storms or extreme high temperatures. A Maltese Cross added to the "RMC" identifies ships in which refrigeration machinery as well as the ship itself have been

built and designed according to the Bureau's rules. A ship listed in the *ABS Record* has no difficulty in securing insurance on both ship and cargo.

With no codified list of rules for refrigeration equipment, a manufacturer had no recourse but to make his equipment as best he could and hope that it would pass inspection. If a valve happened to be made of some material other than steel, and the Coast Guard or Bureau of Shipping decided that only steel was acceptable, precious time was lost while a new valve was made.

Those rules that had been set down did not recognize newer types of refrigerants; Freon-12 and Freon-11, for example, were not codified for use on ships.

No standard design pressures for pressure vessels had been decided on for shipboard refrigeration equipment. Manufacturers followed their own ideas. One manufacturer using a design pressure of 235 lb came out with an entirely different shell thickness than another manufacturer using a design pressure of 225 lb. Because no standard was recognized, each design had to be submitted and passed on separately.

Rules for safety valves on pressure vessels were based on experience with steam. Relief valves were set at the working pressure. This meant that when normal pressure was reached, the valves popped off and permitted gas or steam to dissipate into the atmosphere. This was

¹ ASAR59.1-1950; ASRE Standard 26-R sponsored by the American Society of Refrigerating Engineers.



United Fruit Co.

When loading orders are received by radio from the U. S., cutting crews start work to supply the estimated quantity to meet the ship's carrying capacity. The cut fruit is packed by muleback to the nearest railroad for shipment to port.

impractical with refrigeration gases, since too frequent release of the valves would result in loss of all the refrigerant before the end of the voyage. For refrigerants it was found necessary to set the relief valve at the design pressure of the pressure vessel or whatever part of the system the valve was protecting. In the case of Freon-12 the design pressure is 225 lb; the working pressure, on the other hand, may be in the neighborhood of 130 to 150 lb. There is, therefore, 70 to 100 lb leeway before the relief valve pops.

This question was the one that brought to a head the need for agreement on codified rules. Nowhere was there a codified list of design pressures for different refrigerants.

Informal agreements had already been worked out between the Coast Guard, American Bureau of Shipping, established ship owners, and manufacturers on this and many other questions.

To make these agreements generally available, the American Society of Refrigerating Engineers set up a committee in 1944 to prepare standards for refrigeration equipment on shipboard. In order to bring the widest possible representation into the work, the standard agreed upon

by the ASRE was brought to the American Standards Association for approval. In the words of one of the officers of the ASRE committee, approval by the ASA provides the Coast Guard and the American Bureau of Shipping, which must enforce the regulations, with "material representing the thoughts of industry, ship builders, owners, and regulating

bodies as a common basis for the preparation of their rules."

The Coast Guard have taken excerpts from the standard for use in safeguarding life and health on shipboard.

American Bureau of Shipping requirements for the protection of vessel and cargo are taken almost directly from the standard.

One of the principal contributions of ASA procedure was to bring about greater uniformity between the requirements for refrigeration equipment on shipboard and the American Standard Safety Code for Mechanical Refrigeration, B9. Wherever possible, the requirements for refrigeration equipment on shipboard were worked out to agree with those for land use. However, there are a number of essential differences.

Sea water is used on shipboard for cooling condenser units, whereas fresh water is used on land. Corrosion-resistant materials and protective coatings must therefore be used, and the corrosive action of the salt atmosphere must be kept constantly in mind.

Special provisions must be made for lubricating machinery used at sea. When a ship rolls and pitches, the gyroscopic action of a heavy piece of machinery, coupled with the pressure of the ship's action, exerts



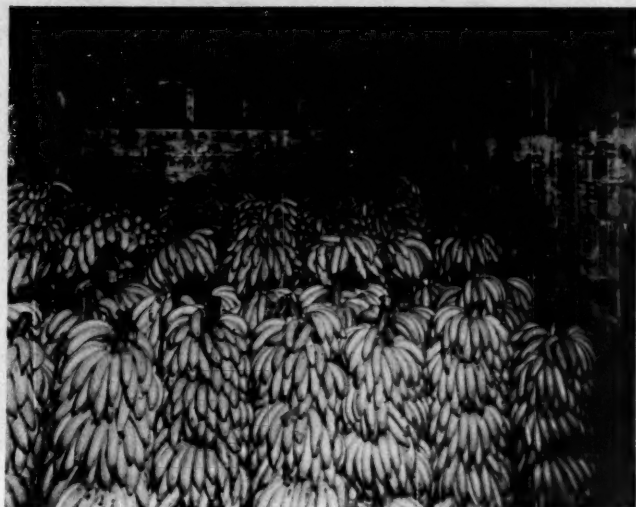
United Fruit Co.

At port, the fruit is loaded on the ship by means of a gantry type crane. Lowered into the hold of the ship, the cargo is stacked in the refrigerated compartments by stevedores. It is unloaded by the same type of gantry cranes.

heavy strains on the machinery bearings. Proper lubrication may mean the difference between continued operation of the equipment and serious breakage. This is taken into consideration in the standard practices.

The possibility of damage to a perishable cargo in case something goes wrong with the refrigeration equipment while the ship is at sea has been foreseen. The standard requires that sufficient reserve machinery must be carried. This means at least two complete condensing units except where only a small space is refrigerated. In this case, plenty of spare parts must be carried. In general, the aggregate capacity of the units must be adequate to protect the cargo. This means that in tropical climates the equipment must be capable of maintaining refrigeration with one unit in reserve and with the machines running 24 hours a day.

Highly important to the ship owner are the requirements for leak testing. Before adoption of the standard, the Coast Guard required that the entire refrigeration installation be strength tested after it was installed. A hydro-



United Fruit Co

As soon as bananas are loaded, every effort is made to reduce the temperature to 57 degrees as quickly as possible. Although this is higher than temperatures for meat, the fruit is warm when loaded and generates considerable heat.

static strength test to 300 psi was required. However, the Freon group of refrigerants cannot be subject to water. Testing can be done with oil instead of water but following the use of oil it takes many days, or weeks, to clean the oil out of the equipment. Now, in line with provisions in the standard, the Coast Guard permits the hydrostatic test to be carried out before installation, and uses gas to test it after installation. Testing is done up to the design pressure.

The shipping and manufacturing groups who have given much time and hard work to this codification of the rules for refrigeration equipment are enthusiastic over the effect it is having. As an American Standard it carries the weight of approval by a broad cross section of the groups concerned. This has already helped to eliminate confusion and conflicting regulations and is bringing about a clearer understanding of what is accepted as good practice for refrigeration equipment on shipboard.

Copies of American Standard Recommended Practice for Mechanical Refrigeration Installations on Shipboard (ASA 859.1-1950; ASRE Standard 26-R) are available at \$1.00 each.



Standard Oil Co. (N. J.)

Meats, transported to all parts of the world, are thoroughly chilled or frozen before loading in refrigerated holds.

Members of the committee responsible for preparation of the standard were:

- W. L. Keller, United Fruit Company, Chairman
- W. F. R. Karsten, General Electric Company, Vice Chairman
- Cecil Boling, Cecil Boling Company
- R. A. Chadburn, Heat Exchanger Company
- Seymour W. Brown, Carrier Corporation
- J. R. Chamberlain, York Corporation
- Harry D. Edwards, The Linde Air Products Company
- I. M. Fisher, General Electric Company
- A. R. Gatewood, American Bureau of Shipping, Chairman, Sub-Committee
- C. W. Hudziets, Henry Valve Company
- C. Macpherson, Lloyds Register of Shipping
- H. E. Parker, Bethlehem Steel Company, Central Technical Department, Shipbuilding Division
- R. C. Robertson, Superior Valve and Fittings Company
- Arthur C. Rohn, U. S. Department of Commerce, Federal Maritime Administration
- R. A. Smyth, Captain, U. S. Coast Guard
- R. J. Thompson, Kinetic Chemicals, Inc.
- August Ulbert, Alco Valve Company
- L. L. Westling, Matson Navigation Company

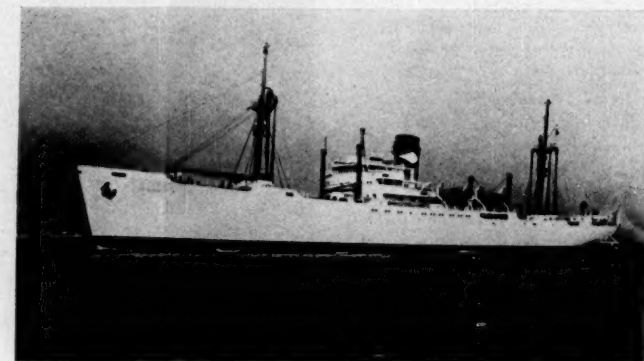
"...of Shoes and Ships and Sealing Wax..."

THE American Bureau of Shipping is not a Government Agency. It is a private non profit organization, whose technical committees are made up of individuals who are expert in their respective fields. However, it is officially recognized by the U. S. Government in the Merchant Marine Act of 1920. All Departments, Boards, Bureaus, and Commissions of the Government are directed to recognize the Bureau as their Agency for the Classification of vessels owned by the United States, "so long as the American Bureau of Shipping continues to be maintained as an organization which has no capital stock and pays no dividends."

As provided in the Load Line Acts of March 2, 1929 and August 27, 1935, the Bureau is appointed to assign load lines—those lines on the side of a ship which indicate the limits beyond which it is unsafe to load the vessel.

The Bureau checks on the adequacy of the hull and on the condition of the machinery used in the ship; it makes the rules for testing the hull; and inspects and certifies the refrigerating machinery and insulation of the cargo.

The Bureau makes a partial check-up every six months on the condition of the refrigeration equipment; and keeps up-to-date with an intermedi-



United Fruit Co

ate, more thorough inspection every two years. A special check is made every four years. This is more severe than the inspection requirements for the hull and operating machinery because of the perishable nature of the cargo.

The Coast Guard has the responsibility for assuring the safety of passengers and crew. Unlike the American Bureau of Shipping it is, of course, a branch of the U. S. Government. No ship can sail without the Coast Guard's certificate of approval. It is the Coast Guard that enforces the rule that no toxic refrigerants can be used on passenger ships. The Coast Guard is respon-

sible for the satisfactory operation of safety valves, for the tests to prevent leakage of refrigerants, and for the assigning of safe design pressures for pressure vessels. It not only supervises the testing of refrigeration equipment while it is being manufactured and issues a certificate for the equipment that meets its requirements, but it also is responsible for gas testing the equipment after it is installed. Every ship under U. S. registry is subject to inspection by the Coast Guard before a voyage to assure the safety of passenger and crew. Refrigeration equipment is only one of the points the CG inspectors check.

Strange Case of the Post Holes

Editorial Published in the St. Louis Post-Dispatch, July 3, 1951

Since an unknown man in southeastern Europe stretched out his arm 15 centuries and more ago, and made the distance of his reach the basic unit of measure, people have had to deal with standards—of length, of weight, and by now of virtually everything else.

The arm reach, which the Greeks called the orguia, the French the

toise, the Danes the faedm, and the Saxons the fathom, was the first of all standards of lengths, and one of the first of all standards. But when the Norman, shorter of reach than the Saxons, invaded England, the working out of a compromise fathom (and all its subdivisions) stretched over three centuries—and not even the French revolution could establish entire the metric system. The fact is, standardizing standards is a slow process.

Today, it is a vital process. It is vital to the common defense of allies that they have equipment and supplies which can be used interchangeably. It is vital to the producers and consumers who depend on mass production for their prosperity; for to the extent that standardization is limited, mass production is crippled.

Anyone who is interested in the subject, and particularly those who may hitherto have found it flat, stale

(Continued on page 260)

Purchasers Save Pennies

IF a good job is done in selling standardization to management, it pays off with substantial savings in time and money. The Standardization Committee's session at the National Association of Purchasing Agents' annual meeting June 4 showed how and why purchasing agents have found this to be true. E. H. Weaver, Manager of Purchases, Union Oil Company of California, is chairman of this committee.

The attempt to reduce costs through standardization of maintenance materials may even have an influence on the design of a product, C. W. Goodman, Union Carbide & Carbon Corporation, declared. He told how a purchasing department should go about putting standards into effect. "Oftentimes materials or parts are specified not realizing what the variations from standards mean in cost or availability," he commented. Purchasing agents were advised to work with the mechanic or maintenance superintendent and in cooperation with them the engineering or equipment design department. "The maintenance department can influence the design department to reduce the large number of sizes used or the variety of similar items without in any way affecting the overall operation of any piece of equipment," Mr Goodman said. He gave examples of how this was done in his own company.

Until about five years ago, vendors generally were not able to meet the automotive industry's standard requirements for materials in the volume needed, H. Rourke, General Purchasing Agent, Ford Motor Company, told the meeting. Heat treating, close tolerances, material analyses, and warehousing facilities were some of the difficulties. During recent years, he said, the industry has modified automotive design making it possible to build standard tooling that will stand up under the high-production, high-volume require-

ments of the automotive industry. Strategically located warehouses now make it possible for vendors to deliver standard parts in large volume promptly, he said. This has eliminated the necessity for stocking large quantities of parts. Today, the automotive industry carries a 30-day stock of most items.

"Only in a very few cases is a standard adopted whereby only one source is able to supply the material," Mr Rourke declared. "It has been our aim to adopt standards where no fewer than three companies can furnish our requirements—we still want to purchase in a competitive market."

Mr Rourke gave many examples of savings in Ford manufacturing costs due to standardization.

Warning that the greatest problem in the entire standardization program will be adequate and consistent formulation of a standard, E. S. Page, Great Lakes Carbon Company, said: "The tendency is to draw standards which are not complete—especially with regard to sampling, test-

ing, acceptance-rejection, and disposition."

"If it is important to say what properties are required and how they are to be tested, it is also of value to define what happens if the material is not within the specification," he declared. To help purchasing agents prepare a satisfactory standard, Mr Page presented an analysis of what a Purchase Standard should be.

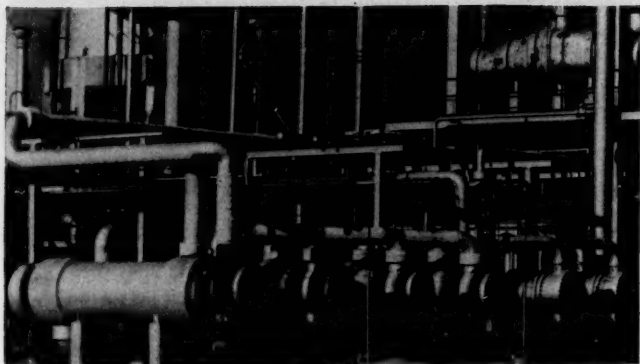
How the Union Carbide & Carbon Company Has Used Standards

By C. W. Goodman

My company found we had a large variety of heat exchangers all with different size tubes. Every time we bought a new heat exchanger, we had to buy a set of replacement tubes for our stores. The investment in spare tubular goods mounted at a terrific rate. After an investigation it was determined that two sizes of tubing



United Aircraft Corp
Standardization of repair and maintenance procedures of industrial truck equipment has reduced the down-time for Ford's Rouge area from 42 to 5 percent.



Standard Oil Co. (N.J.)
Union Carbide and Carbon Company bought replacement tubes with each heat exchanger purchased. Today, they have no need for such practice.

in various metals would be acceptable for over 90 percent of the heat exchanger problems that we had in our plants. As a result, we now specify the tube size and the maximum tube lengths. Today when we buy a new heat exchanger it is not necessary to add anything to the maintenance stores as we have in stock two size tubes in the various metals which are usable in any of the equipment which we may have or acquire. Two things resulted: first, in a relatively few years our inventories were reduced substantially in proportion to the number of heat exchangers. Secondly, we were able to maintain tubing for emergencies which was not always possible previously.

Similar Sizes

In going through your stock of similar items you will undoubtedly find many unusual sizes, such as 5/16 in., 7/16 in. and 9/16 in. These can usually be eliminated or replaced by the next standard size. Similar size bolts with different threads are another example. Pipe offers an excellent opportunity. For every size pipe you need a complete set of fittings, valves, gaskets, etc. In several of our plants we eliminated 1 1/4-inch and 2 1/2-inch pipe by using the next larger size after a study of the overall costs including maintenance stores. In one of our plants we formed a committee of the master mechanic, storekeeper, purchasing agent, and plant accountant, and were

able to reduce our stores inventory \$50,000 to the satisfaction of all concerned. This was accomplished by discontinuing many sizes which had a limited usage and substituting other stock sizes equally as satisfactory. Oftentimes, it is advantageous to buy ten of one type rather than five of two different but similar types. This is particularly true if it is necessary to provide a maintenance store for both sizes. The cost of carrying the additional maintenance stores for the life of the equipment usually far offsets the small saving in the original cost.

Supply materials often present a problem similar to that of maintenance materials. Most of you will find if you check your supply stores a wide variety of sizes for the same item. Electric light bulbs are one of the prime examples of this type of item. Containers, bottles, and packaging materials are another. Fasteners of all kinds are another. Printed forms fall in this same category. By studying the use figures on any group of similar items you will find that some items have a very low turn-over. Slow-moving items naturally offer the greatest opportunities for your standardization efforts.

At several of our plants we have set up a plant standards committee of which the Purchasing Agent is a member. Under the guidance of one committee, a complete list was published of all the material considered standard within the plant. Each item

was assigned an identifying code number. No new item can be added to this list without approval of the committee. This list serves as a guide for the Design Department and insures standardization of future equipment. This same plant uses a permanent requisition. The code number for any item or material is also used as the requisition number. This has aided considerably in the identification of material as it passes through the various departments in the plant.

How the Ford Motor Company Saves Through Standards

By H. Rourke, General Purchasing Agent

The impact of standardization on Ford manufacturing costs has been terrific. Many of the savings are not measurable in dollars and cents and in many instances they may be small, but in the over-all picture standardization has amounted to a considerable sum of money. In the field of supply items, for instance, the Ford Motor Company now stocks approximately 42,000 items as compared with over 80,000 items stocked prior to the initiation of the program. The inventory value of stock items has been reduced by over 27 percent since 1948, in spite of the fact that the piece cost of the items involved has risen considerably. Furthermore, a considerable reduction in handling cost at General Stores has been accomplished.

There has been a considerable saving in floor space. For example, twist drills formerly occupied 798 cubic feet of bin space, this has been reduced by over 50 percent.

In 1949 and the first part of 1950 more than 44,800 welding electrodes were used in Ford Motor operations. In May of 1950 many of these electrodes were obsoleted and replaced by standard electrodes. The average life of the new electrodes is ten times greater than those replaced. Due to standardization of one electrode a saving of over 80 percent was realized—a substantial saving when the use of electrodes at Ford Motor is considered. Through stand-

ardization, material stores and stock cribs were cleared of obsolete electrodes, holders, butt welding jaws, and other welding parts, greatly reducing the inventory of perishable parts for welding.

Prior to the current standardization program, Ford specified a single material for all steel jig and drill bushings and liners. The material specified did not conform to industry-wide standards and as a result we paid a premium for all Ford bushings. Provision has been made to use three bushing steels generally accepted in the industry and consequently to conform to manufacturers' standards with the result that we realized a substantial reduction in bushing cost.

Prior to 1948, 90 percent of the machine cutting tools used by the Ford Motor Company were special tools which did not conform to any industry standard. Studies have been made with a view to using, wherever possible, commercially available tools. As a result of standardization, special tools now are the exception rather than the rule.

Cutting Tools

In the standardization of milling cutters, drills, reamers, and other cutting tools, it is necessary that the adoption of these tools to the machine tool be checked during the engineering stage of the machine tool in order that spindle diameters, tapers, internal and external threads may be included in the design of the machine tool. This is a problem which the machine-tool buyer must coordinate with the tool buyer, standards committee, and the machine tool manufacturer. The machine tool builders have been exceptionally cooperative in our effort to use standard cutting tools.

In the area of electric motors, 18 months ago Ford used a modified NEMA frame which was generally known as the Ford NEMA standard. Prior to our current expansion program several NEMA standard motors were checked and tested and found to be suitable for our application and the NEMA standard has been generally accepted. Of course, it will be



Without specifications to control quality, workmanship, and material of various vendors' products, Ford paid a half million dollars for hand coverings in 1949.

quite some time before the conversion to NEMA standard motors is complete.

Also in the area of electrical equipment, literally hundreds of different styles of limit switches were used throughout the company. While existing installations have not been removed, replacements and new installations are confined to 25 different standard styles that cover all of Ford needs.

Industrial truck equipment is another area where standardization has proven very beneficial. Standardization of repair and maintenance procedures has reduced the down-time for Rouge area industrial truck equipment from 42 percent to 5 percent. This increase in availability of industrial truck time has resulted in a substantial saving in the number of industrial trucks required to service the Rouge area.

During the calendar year of 1949 protective hand coverings cost the Ford Motor Company a half million dollars. There were no standards or specifications which controlled the quality of the gloves, mitts, and hand pads purchased. There was no way of knowing whether two prospective vendors were bidding on items of the same quality material and construction. As a result of standardization our vendors now bid to furnish items of identical quality, workmanship, and material.

Material-handling containers have been standardized to allow uniformity of handling and storage, maxi-

mum use of floor space, and the use of standard accessories and inexpensive dunnage. Furthermore, standardization of containers permits the use of standardized industrial truck equipment and permits uniform supply area characteristics. This greatly facilitates the layout and development of new and rearranged plant supply areas as well as permitting more efficient use of existing areas.

In a similar manner considerable savings have been achieved in the following areas:

1. Floating holders
2. Milling machine arbors
3. Counterbore and spot face holders
4. Cut-off blade tool holders
5. Carbide inserts and holders
6. Drills
7. Face milling cutters
8. Bullard chucks
9. Gage maker's tolerances
10. Cataloging of cylindrical plugs, masters and thread and snap gages
11. Plain adjustable snap gages
12. Masters
13. Drill hole tolerances
14. Adjustable recess snap gages
15. Reversible thread and plug gages.

The results of standardization achieved through the concerted efforts of the main standards committee and its fourteen subcommittees have been most gratifying. Millions of dollars have been saved through lower piece costs, reduced inventory requirements, reduced maintenance down-time and in general more efficient use of the Ford Motor Company's facilities.

(Continued on page 252)

The Golden Jubilee of the British Standards Institution

(As reported from the Jubilee for Standardization)

At the close of the British Standards Institution Golden Jubilee celebrations in the Council Room at Victoria Street, London, on Saturday, June 23, Vice Admiral G. F. Hussey, Jr. read to the International gathering present fraternal greetings from ASA to BSI. This greeting said:—

The American Standards Association Honors The British Standards Institution

For

its leadership in global standardization as the first national standards body. Its friendly and cooperative assistance to the standards bodies of other nations following in its footsteps. Its vision and statesmanship in the governing and technical circles of the International Organization for Standardization (ISO). Its half-century of service resulting in a higher standard of living with more and better goods for more people, and

Congratulates

the Institution, on the occasion of its Golden Jubilee, on having reached this milestone in the path of economic progress and enlightenment.

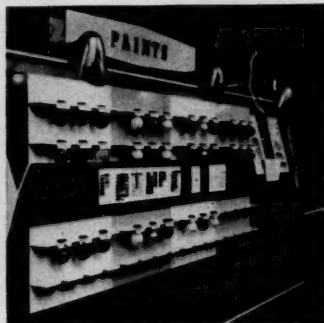
June 1951

(Signed) Thomas Jolly,
President.
G. F. Hussey, Jr.
Managing Director
and Secretary.

In many ways the closing session of the Jubilee was the most interesting and exciting of a very full week, during which representatives of



Entering BSI's exhibit, the Information Center and display of publications.

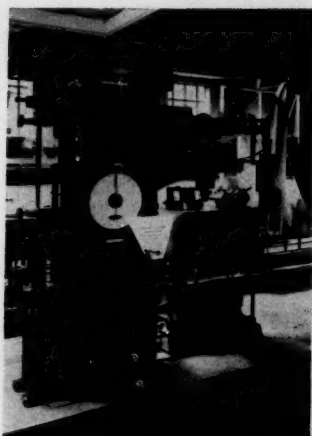


Above left: The Lead industry uses a panel display to show the lead pipes and sheets manufactured according to British Standards. Above right: the Paint industry displays many ingredients of paints, subject to British standard specifications, in glass flasks. At left: A modern jet propulsion engine forms the centerpiece of the aircraft industry exhibit.

the Standards bodies of nearly 30 nations were the guests in London of the BSI. All the delegates placed on record their keen appreciation of their stay in London and several of

them presented BSI with gifts distinctive of the crafts and industries of their countries.

The program itself had been a full one, including a Government recep-



The Textile Divisional Council is the "youngest" in the BSI. Above: A tensile strength-testing machine.



Even lighthouses have specifications. The above is a double-flashing optical apparatus to be used in West Africa.



Personal safety equipment is an important section of BSI's work. Included in the exhibit of safety gloves, boots, and harnesses; breathing apparatus; fire extinguishers; was a machine for falling-weight test for protective toe caps.

tion on the opening day, June 18, when the guests were received by Sir Hartley Shawcross, M.P., President of the Board of Trade; a formal banquet on June 20 at Guildhall, one of London's most historic buildings, when the Guest of Honor was Mr Hugh Gaitskell, M.P., Chancellor of the Exchequer (many other Ministers and top-ranking representatives of British industry and Government were also present); and a Conversation on Friday evening, June 22, at which over two thousand members and friends of the BSI attended to greet the overseas visitors.

In between these formal occasions there were visits to Hampton Court and Windsor Castle, two of Britain's

most historic royal residences, and to Eton College, perhaps the most famous and certainly one of the oldest of England's schools; a trip through London Docks in the private launch of the Port of London Authorities, and a formal visit to the South Bank Exhibition of the Festival of Britain. Here, the party was received in the Royal Suite by General Lord Ismay, Chairman of the Festival Council and by Sir Gerald Barry, Director-General of the Festival.

The other major high-light of the Jubilee celebrations was the Exhibition "British Standards: Measure of Industrial Progress" which was staged for two weeks at the Science

Museum, South Kensington, and in which 50 major industries displayed the extent to which standards and standardization have been developed as a means of increasing efficiency and improving quality.

The Development of British Standards

Coincident with its Jubilee the British Standards Institution published a history of the movement under the title *Fifty Years of British Standards*. This traces the development from the year 1901, when the Institution originated in a joint Committee of the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Iron and Steel Institute, the Institute of Naval Architects, and the Institution of Electrical Engineers. Although standards had earlier been developed indiscriminately, this joint Committee was the first-known instance of an effort to put industrial standardization on an organized and practical basis.

The problem before this Committee arose from the large number of sizes of steel sections which were then in vogue, many differing in minute dimensions. Although this dimensional standardization is perhaps the most well-known of the various types of standards, the Committee even then found that it was not sufficient merely to lay down an ordered range of sizes but that it was essential to specify the particular use for which each size was suitable.

The benefits attendant upon this work were quickly perceived and other industries entered the British Standards national movement, until today the British Standards Institution is the body recognized in Great Britain, both by Government and by Industry, for the preparation and promulgation of all standards of national application, except those covered by special Acts of Parliament.

The Institution now covers 58 main industries with over 2,200 committees and with 13,000 members. It has published over 1,700 British Standards and now issues new British Standards and amendments and revisions to old ones at a total rate of about 450 a year.

Standard Desks—No Office Pets

By Herbert W. Vetter

USERS of office equipment will be gratified to know that standards have now been approved by ASA for the dimensions of desks and tables for general office use. The standard, X2.1.1-1951, has been under consideration for about two years and is the first in the office furniture line to receive ASA approval.

Desks under the new standard will be in only nine widths, as compared with twelve under the current situation, and depths are reduced to three as compared with five.

The new and old distribution of combination of sizes among the various types of desks and tables is shown in Table I.

For the purpose of this standard it has been necessary to clarify the terminology.

General office desks and tables are those of 60-inch width and less and do not include the larger executive sizes.

Single-pedestal desks have drawer or compartment arrangement at only one side of the user's position.

Double-pedestal desks have drawer or compartment arrangement at both sides of the user's position.

The width is the long dimension measured from edge to edge of the desk or table top.

Depth is the short dimension measured from front to back edges of the desk or table top.

Height is the distance of the extreme upper working surface of the desk top or table top from the floor.

The front of the desk is that part at which the user normally sits.

Right and left designations. The right portion or pedestal of the desk or table is that part to the right of the user seated at the front of the desk or table, the left is that part to the left of the user.

The overall dimensions of desk



Commonwealth Edison

Standard-size desks not only make a neat appearance, but afford more accessibility and efficiency. In 1923, there were 508 distinct units being manufactured. Under the new standard, there will be 9 different widths and only 3 depths.

and table tops are listed in the standard as shown in Table II.

A tolerance of plus or minus $\frac{1}{4}$ inch is listed on the overall top dimensions specified above.

The height of the desk or table is listed at either 29 or 30 $\frac{1}{4}$ inches if fixed, or adjustable between these levels with a tolerance permitted of plus or minus $\frac{1}{4}$ inch.

It is believed that the single and double-pedestal clerical desks represent from two-thirds to three-fourths of the total number of desks in use. Back in about 1923 a questionnaire issued by the National Office Management Association found

"that the standard office desk is produced in 15 types, one to 29 sizes, and in one to five woods and finishes, and in one to six grades, thus giving a total variety of 508 separate and distinct units in size, wood, and finish. The quantities sold during the year varied from a single desk in 21 different sizes up to almost 20,000 desks in the most popular type and size. Of the 508 units there were 395 where the annual sales per unit was less than 100 desks. In other words, in 78 percent of the units the annual sales were so small as to make these units practically specialties." The survey mentioned referred to all

Table I

	Metal		Wood	
	Current*	New Std	Current*	New Std
Double Pedestal Clerical	9	4	8	4
Single Pedestal Clerical	10	2	10	2
Typist—Single and Double	14	7	11	6
Calculating Machine	8	6	13	6
Tables	8	6	10	5

* Combinations of sizes which appeared in returns from questionnaires.



Standard Oil Co. (N. J.)

With varied types and sizes of desks, traffic planning and floor layout becomes difficult. The proximity of personnel and equipment can reduce efficiency in the confusion of noise and in procuring and delivering office materials.

types of desks being manufactured at that time but the emphasis was definitely on wood, not only because of the few metal desks that were in use but because of the few metal desk manufacturers.

This questionnaire reflects findings as of 1923, and indicates the clear

need for standards then. Although considerable simplification has taken place since that time, further need for standards was felt, and the newly established American Standard will be a very definite assist to both manufacturer and user. Every office manager will applaud the action as a

tremendous boon to efficient and flexible office layouts. Such standards will help to reduce costs and make his efforts more effective by—

1. reducing the necessity for individual decisions
2. improving controls
3. eliminating duplication of effort
4. facilitating interchange of personnel and equipment
5. reducing the number and variety of equipment
6. minimizing confusion in ordering
7. facilitating quantity purchases

When an office manager starts looking for a desk his job will now be very much easier. With standard sizes available from distributors, it will be a simple matter to determine which one best suits his particular office. Once this has been established, the need for individual decisions will have been eliminated each time new equipment is ordered. This will also improve his controls over the ordering and handling of desks, especially where branch offices are concerned. No longer will effort be duplicated because established standards have taken care of this. Uniform sizes will make possible an easy rearrangement of his office and should facilitate the interchange of personnel. By reducing the number and variety of equipment at the source of supply, confusion will be minimized and will enable every office manager to reduce cost further by buying desks in quantity when planning for the future.

Manufacturers tell us that standardization will permit them to reduce the variables and concentrate on standard lines. In times such as these this is a necessity, due to the shortage of metal and proper grades of lumber and the fact that greater production of standard items is essential to meet the need for desks and tables with the materials available.

The approval of this standard is gratifying and encouraging. May this be only the beginning in the establishment of office standards.

Table II

General Classification	Overall Top Dimensions (Inches)				
	Metal		Wood		
	Width	Depth	Width	Depth	
Double Pedestal	50	30	50	32	
	55	30	52	32	
	60	30	58	32	
Single Pedestal	60	34	60	34	
	40	30	42	32	
	45	30	44	32	
Tables	45*	34*			
	45	30	42	32	
	50	30	44	32	
	55	30	50	32	
	60	30	52	32	
	60	34	58	32	
			60	34	

* Flat top or fixed bed metal typewriter desks only.

No More "Dimensional Headaches"

by Lester Brigham

PRODUCERS, distributors, and users of office supplies, alike, should welcome as particularly good news the fact that an American Standard for the order of designating the dimensions of index cards and record-keeping cards has been officially established, at last.

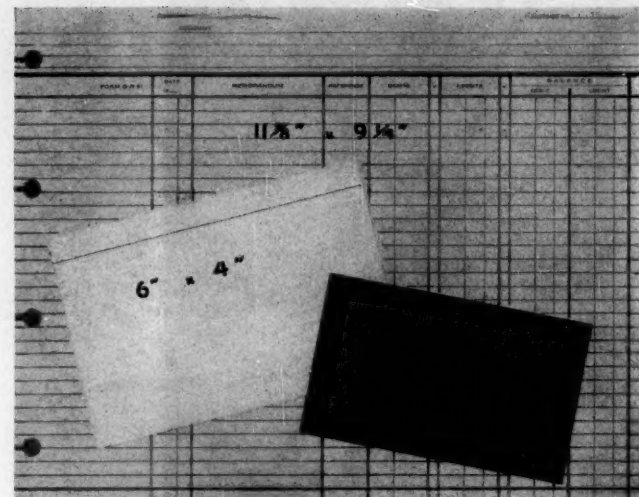
The nomenclature for this most important card factor has, in the past, been chaotic. Producers and distributors have used *both* the vertical and the horizontal dimension as the first of the two listed dimensions; namely, "3x5" or "5x3" for a card five inches wide, horizontally, and three inches deep, vertically.

Buyers when ordering, and distributors when interpreting and filling orders, have had to spend a great amount of unnecessary time in making sure whether the requirements were expressed with the vertical or horizontal dimension as the first one listed.

Those responsible for the recently accepted recommendation that the horizontal dimension be listed first for all sizes of cards have advanced definite and logical reasons for this recommendation. Simply expressed, these are as follows:

(1) The average user of forms, either printed or ruled or combinations of both—in cards or sheets—almost always thinks first in terms of the horizontal dimension when designing these forms for special use. This consideration applies to columnar ruled forms, invoices, statements, ledger cards, sales and purchase order forms, and nearly all other of the numerous classes of record-keeping media. Furthermore, the great majority of entries made on these forms, either typed or handwritten, are horizontal (from left to right) and *not* vertical (from top to bottom).

(2) Regardless of the width of the form, one usually thinks in terms of the horizontal dimension



first—even in sizes as large as 17 x 11 in. or 22 x 11 in., for example. This is due to the fact that this dimension governs the utility value of the form from the standpoint of the over-all spread required, the total number of columns to be allocated, the respective widths of these columns, and similar considerations.

(3) The vertical space requirement can be considered, quite logically, as of secondary importance. This is because it is determined usually by the number of lines of horizontal entries one wishes to make on the form and the amount of space to be left between the lines.

Remington Rand and Yawman & Erbe, two of the largest manufacturers of index cards, have listed the horizontal dimension first in their catalogs and price lists for quite some time, as have numerous smaller producers. On the other hand, the predominating practice, heretofore, among the great majority of producers of index cards has been to list the vertical dimension first, regardless of size of the card. This probably resulted from the fact that naming the vertical or binding side of ring books and post binders first

has been generally accepted standard practice in the ring book and post binder industry for quite some time.

However, inasmuch as there is no real or close "family relationship" between index and record-keeping cards and binders, there would seem to be no reason to assume that the new standard for the nomenclature of card dimensions need in any way contradict or conflict with the practice of naming the vertical dimension first in the case of ring books and post binders.

Mr Brigham, General Office Manager, American Optical Company, is vice-chairman of Subcommittee 4 on Office Supplies of the Sectional Committee on Office Standards, X2 and was chairman of the technical subgroup which developed the standard.

Mr Brigham represents the National Office Management Association, sponsor for this project. Other members of the subgroup are:

- E. E. Sides, Moore Business Forms, Inc., Worcester, Mass.
- K. G. A. Andersson, Norton Company, Worcester, Mass.
- D. L. Brennan, Reed-Prentice Corporation, Worcester, Mass.

The Second National Standardization Conference

October 22-24

THE National Standardization Conference will concentrate on the part standards are playing in national defense at its second annual meeting October 22-24, in The Waldorf-Astoria, New York. The announcement was made by Vice Admiral G. F. Hussey, Jr., managing director of the American Standards Association. The Association will hold its 33rd annual meeting in conjunction with the Conference.

Admiral Hussey said that the Conference will report on progress made and steps to be taken in filling the country's need for more and broader standards in engineering, safety, consumer goods, and other fields. The theme of the Conference, he said, will be "Strengthening America through Standards."

"Lack of adequate national standards," Admiral Hussey stated, "has cost the country incredibly heavy losses in the past decade. It has cut the purchasing power of every citizen and lessened the effectiveness of every soldier. If we are to carry out successfully the tremendous civilian and military production program we are now engaged in, we simply cannot afford to continue to lose production and waste manpower, materials, time, and money because of lack of standards."

The program committee in charge of the Conference consists of Thomas D. Jolly, Pittsburgh, president of

ASA and vice-president, Aluminum Company of America, chairman; C. W. Bryan, Jr., Chicago, president, Pullman-Standard Car Manufacturing Company; W. J. Donald, New York, managing director, National Electrical Manufacturers Association; E. H. Eacker, Boston, president, Boston Consolidated Gas Company; Roger E. Gay, Hartford, president, Bristol Brass Corporation; W. P. Kliment, Chicago, Crane Company; and F. R. Lack, New York, vice-president, Western Electric Company.

The American Ordnance Association will be in charge of one session of the Conference. A session on the use of standards for better purchasing will be sponsored by the Standardization Committee of the American Association of Purchasing Agents. E. H. Weaver, of Los Angeles, manager of purchases, Union Oil Company of California, and Vincent de P. Goubeau of Camden, vice-president in charge of materiel, RCA-Victor Division of the Radio Corporation of America, are developing the program.

Special problems that face company standards departments will be taken up by the Company Member Conference, representing the 2,200 company members of the ASA. The full-day Conference program will be under the direction of Mr. Kliment, chairman, and A. J. Beck of the De-

troit-Edison Company in Detroit, vice-chairman.

The work being done in standards by trade associations and technical societies will be discussed at a session of the Conference of Executives of Organization Members of the American Standards Association. Mr. Donald will preside as chairman. T. E. Veltfort, New York City, manager, of the Copper and Brass Research Association, is vice-chairman.

At the opening session of the three-day Conference, W. C. Wagner, of the Philadelphia Electric Company in Philadelphia, will report on the year's activity of ASA Standards Council, of which he is chairman. Election of officers and new members of the board of directors for 1952 will be announced at this session.

The Conference will close with a luncheon at which the 1951 award of the Howard Coonley Medal will be made. The medal is given annually to a leader in any field who has made an outstanding contribution to national standardization as an instrument of free enterprise. Mr. Jolly will make the presentation.

Names of the prominent speakers who will address the luncheon and the opening session in a keynote address have not been announced.

Company members of ASA and all others interested in standardization work are invited to attend part or all of the Conference.

• • Some Recent Work by ASTM—ASTM Technical Committee D-12 on Soaps and Other Detergents elected F. W. Smither, Chemist (Retired), National Bureau of Standards, Washington, D.C., Honorary Chairman. New work proposed for this committee includes investigation of test methods or specifications for sodium tripolyphosphate and sodium orthosilicate, satisfactory wetting tests, corrosion tests for washing machine components, and a suggested outline for laboratory evaluation of metal cleaners.

A new technical committee was organized recently to formulate methods of atmospheric sampling and analysis, selection of acceptable nomenclature and definitions, and stimulate research. The committee's work will cover sampling and analysis of the air both in plants and outside. Problems of pollution and air contamination will be considered as well as normal constituents and materials which are not toxic or injurious. Subcommittees cover nomenclature and units, methods of sampling, analytical methods, and instrumentation.

L. C. McCabe, chief of the Office of Air and Stream Pollution, U.S. Bureau of Mines, is chairman of the committee; F. S. Mallette, American Steel and Wire Company, is vice-chairman; and H. S. Schrenk, research director, Industrial Hygiene Foundation of America, Inc., is secretary.

• • Former ASA President Henry B. Bryans has just been elected to the Board of Managers of The Franklin Institute. Mr. Bryans is president and director of the Philadelphia Electric Company.

Fluorescent Lamps—A Consumer's View

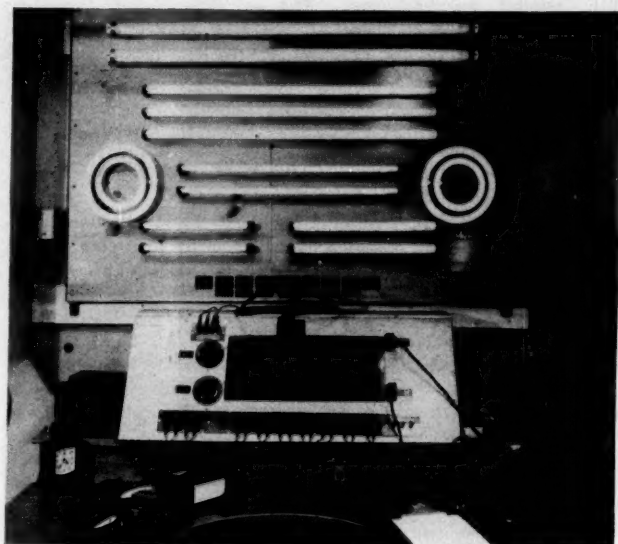
by HOWARD J. BERKA

Mr Berka is a member of the technical staff in the Bell Telephone Laboratories, Incorporated, of New York City. His present assignment involves the development of lighting equipment and lighting arrangements for use in Bell System telephone central offices.

He represents the ASA Telephone Group on Sectional Committees C78 and C73. The latter is concerned with standards for attachment plugs and receptacles. Mr Berka is also a member of the Light Sources Committee of the Illuminating Engineering Society.

While the average consumer of electric lamps—the homeowner, small store owner, etc.—enjoys the benefits of standardization, he does not, in general, fully appreciate them. However, to those close to the problems of application and maintenance on a large scale the benefits of standardization are very definitely recognized and appreciated. Standards for incandescent lamps, followed for many years by the lamp industry and recently published by the American Standards Association, have made it possible for the consumer to specify a lamp of given type with the assurance that each of the various manufacturer's products will be mechanically and electrically interchangeable. This highly desirable situation results in simplification of engineering, procurement, stock control, and installation. To the large-scale consumer, this means real money saved. It also means that during normal times he can take advantage of performance and price differences among manufacturers and, during periods of emergency when manufacture of civilian goods has been curtailed, he can very often keep all sockets filled by purchasing a portion of his total requirements from each of several manufacturers.

Now, after five years of study and



Electrical Testing Laboratory
A battery of testing equipment, attached to the panel on which fluorescent lamps are mounted, assures consumers that the lamps meet all specifications.

investigation, standards of interchangeability for 30 fluorescent lamps are available. Published as Proposed American Standards for trial and study in June 1949, the single-sheet standards in their present form reflect the results of this circulation and of additional study on the part of Subcommittee 2 of ASA Sectional Committee C78. Intended primarily to assure electrical and mechanical interchangeability, the standards, which are listed in the accompanying table, fully describe each lamp under the headings—"Lamp Designation," "Dimensional Characteristics," "Operating Characteristics," and "Starting Requirements." Performance requirements such as life and lumen output are not included.

Standards for fluorescent lamps must, of necessity, be integrated with standards for ballasts and starters since the electrical characteristics of each determine the over-all performance of the circuit. Without this integration of standards, interchange-

New American Standards for Electric Discharge Lamps

Lamp Type	Lamp Size	ASA Number
Preheat-Start	4-watt T-5	C78.400-1951
	6-watt T-5	C78.401-1951
	8-watt T-5	C78.402-1951
	14-watt T-5	C78.403-1951
	15-watt T-8	C78.404-1951
	15-watt T-12	C78.405-1951
	20-watt T-12	C78.406-1951
	30-watt T-8	C78.407-1951
	40-watt T-12	C78.408-1951
	85-watt T-17	C78.409-1951
	100-watt T-17	C78.410-1951
	32-watt T10	
Instant-Start	40-watt T-12	C78.600-1951
	40-watt T-17	C78.601-1951
Instant-Start	42-inch T-6	C78.801-1951
Single-Pin	48-inch T-12	C78.808-1951
Hot-Cathode	64-inch T-6	C78.803-1951
	72-inch T-8	C78.805-1951
	72-inch T-12	C78.809-1951
	96-inch T-8	C78.807-1951
	96-inch T-12	C78.810-1951
Bactericidal	8-watt T-5	C78.1200-1951
	15-watt T-8	C78.1201-1951
	30-watt T-8	C78.1202-1951
Cold-Cathode	20-mm 52-inch	C78.1100-1951
	20-mm 64-inch	C78.1101-1951
	20-mm 76-inch	C78.1102-1951
	20-mm 84-inch	C78.1103-1951
	20-mm 93-inch	C78.1105-1951
	25-mm 93-inch	C78.1104-1951

(Continued on page 258)

National Production Authority Activities

Development of recommendations to conserve scarce materials, with standardization as one of the methods used, is an important function of some 400 Industry Advisory Committees that have a voice in planning defense production activities. These committees function in the National Production Authority, Defense Minerals Administration, the Munitions Board, and other defense agencies.

Although Government orders now represent only 10 percent of production, this does not tell the entire story. Government orders may require 125 percent of some scarce material—such as aluminum or nickel, for example. The problem arises in providing enough of this scarce material for those civilian products where its use is essential. To do so, Government orders may have to be cut back as much as 40 percent in order to permit use of the material for essential civilian production. Through the cooperation of the industry advisory committees, substitutes may be found, or standardization and simplification methods recommended, to cut down use of the needed material.

No mandatory conservation or standardization orders have been issued. Recommendations are used by industry, as they are prepared, as a guide for voluntary conservation. In addition, the recommendations are held in readiness for use in case the need for a mandatory order becomes urgent.

The National Production Authority, working under the Department of Commerce, has set up 314 committees; the Agriculture Department's Production and Marketing Administration has 30; and the Munitions Board reports 27, with 64 subcommittees and a total membership of 884 persons.

Formation of the committees and selection of members follow the pattern established by the War Production Board during World War II. Government commodity divisions request a committee, indicate why it is

needed, and suggest names of members.

Membership is determined on four bases: geographical location, size of businesses represented, membership or non-membership in trade associations, and segments within the industry.

A general Conservation Coordinating Committee is operating under the Defense Production Administration with Howard Coonley at the head. Blodgett Sage is Executive Secretary in charge of the Committee's activities. Thomas Spooner, formerly with the Westinghouse Electric Corporation and well known to the American Standards Association for his activities on the Company Member Conference, is acting as consultant. Eighteen organizations are members of the Committee. Acting as an over-all coordinating group for unified action on conservation, the Committee refers questions of general interest either on national or international conservation problems to these organizations for action. Five subcommittees have been set up so far on urgent conservation questions: molybdenum-nickel; critical alloy materials; construction; sulphur; and liaison between the U. S. and other countries for interchange of information on available materials.

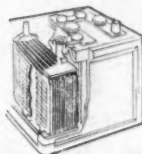
Consideration has been given to standardization recently by industry committees working in NPA as reported below:

Sterilizers—The industry committee is agreed that savings in scarce materials, particularly nickel, can be made through standardization of sizes and specifications of sterilization equipment.

Steel Windows—NPA has told the industry committee that a standardization recommendation for builders' hardware is being developed. It would make latches and other attachments conform to new window styles.

Glass Containers—Simplified designs for 42 basic glass containers have been established to conserve critical

materials for defense production, NPA announces. Schedule I to Order M-51 includes 21 designs for food; seven for malt beverages; seven for wine bottles; four for distilled spirits; and four for drug and chemical products. Specifications for each design are included in the schedule. Most of the basic designs can be produced in a number of liquid capacities. Use of the simplified designs is not mandatory, but NPA may require the packaging of specified products in the simplified glass containers should it become necessary, the announcement declares. A conversion period is provided in event such end-use restrictions are made necessary. The glass container industry is currently engaged in efforts to increase production levels over the 106 million gross glass containers turned out in 1950.



Storage Batteries—Recommendations to limit production of storage batteries to specified types are being prepared with the cooperation of Department of Commerce scientists and industry technicians. The industry advisory committee agreed with NPA that a limitation on models would be more effective than restrictions on minimum-maximum amperage capacities in assuring optimum use of available materials. It is estimated that 360,000 tons of lead and 81,000 tons of sulfuric acid are needed in 1951 to meet civilian requirements of 32.3 million automotive storage batteries.

Jacks—NPA and the Jack Industry Advisory Committee have discussed recommendations for limiting production of jacks to specified models, sizes, capacities, and specifications. The proposal would affect mechanical, hydraulic, air, and electrically

operated jacks, except those produced for military agencies. It would call for periodic reports to NPA on total production and size of order backlogs.

Wood Boring Bits—NPA has suggested that the industry standardize as much as possible the size and type of steel ordered so that steel mills will be better able to schedule mill production. At a meeting of the industry advisory committee it was reported that specifications drawn up by the Corps of Engineers are being studied. Standards developed to conserve materials during World War II are still in widespread use, the Committee told NPA.

Floodlighting—The Industry Advisory Committee has asked NPA to appoint a task group to study possible revisions to underwriters' standards for lead wires on small floodlights. The proposed revisions would be recommended to underwriters' code officials. The committee believes present standards are wasteful.



Street Lighting—Recognition of the importance of street lighting in reducing night traffic accidents and crime is being urged by the Street and Highway Lighting Industry Advisory Committee. Studies are being made of possible substitutes for critical materials in order to maintain production of lighting equipment. Production should be increased in order to bring street and highway lighting up to standard in many areas, the committee declared.

Aviation Ground Lighting—By standardizing mounting bases for runway lights and using sheet steel instead of cast iron, the industry has reduced use of metal from 105 pounds to 40 pounds per base, the advisory committee reports. However, despite its conservation measures, the industry is not able to obtain adequate steel, it declares.

Commercial and Industrial Lighting—The industry has already simplified

designs and standardized much of its production to conserve materials, the advisory committee has reported to NPA.

Heavy Forged Tools—The Industry Advisory Committee has suggested that the National Production Authority issue an order limiting sizes and types of picks, sledge hammers, and other striking tools to conserve critical materials. Members urged that the limitation also apply to packaging materials. When tool handles are mounted by the tool manufacturers, packaging space and materials are wasted, they declared.

Power Transformers and Distribution Transformers—The standardization program carried on for a number of years for transformers (see American Standards C57.10-1948 through C57.36-1948) makes it unnecessary for

NPA to take further action for conservation, the Advisory Committee has told the NPA. Difficulty in procuring materials and shortage of engineering personnel are compelling manufacturers to simplify and standardize production, they declared. The present level of use of materials cannot be appreciably reduced if commitments to public utilities and defense industries are to be met, they explained.

Tacks—Recommending that NPA discuss packaging standards with Government procurement officials, members of the Advisory Committee said insistence on one-quarter and one-half pound packages is causing a hardship on manufacturers who have their packaging machines tooled to one-eighth pound and one-pound tack packages—the accepted sizes.

Pennies

(Continued from page 243)

Requirements for a Good Purchase Standard

By E. S. Page, Great Lakes Carbon Co

A. Scope—At the beginning of the standard a general statement is made—a sort of introduction:—(1) To tell the kind or class of material covered, with any general pictures or characteristics, and (perhaps) (2) To tell for what purpose the material is to be used, if such information is helpful in identification or selection.

B. Specification—Here is the limiting "description" of the material—within well defined ranges (maximum-minimum-average) expressed in one or more of the following terms:—(1) Processing (method of manufacture); (2) Properties ("quality"); (3) Performance.

In addition—and for each part of the specification—there must be stated:—

The Method of Test by which compliance with the specification will be determined.

The entire purpose of each standard is Action—or what used to be

called Performance. The material or commodity described will be purchased for what it will do or for how it will serve. However, inclusion of Performance Specifications in any standard usually is quite difficult, since the standard is to be used for purchase and suppliers are reluctant to accept any responsibility therefor.

It is well to remember that any statement of Performance in a standard, unless most completely set forth, may be only a part of a complex problem which includes:—

- (1) Types of performance; (2) Division between buyer and seller of (a) Design and original workmanship and material; and (b) Responsibilities and obligations for action; and (3) The element of time.

C. Shipment—Here reference is made to: (1) Quantities in each shipment, and (2) Containers or transportation equipment to be used.

D. Receipt — and **E. Disposition**—Each standard must provide for (1) method of sampling; (2) Performance of tests; (3) Acceptance or rejection; (4) Disposition in event of rejection—All in relation to Time with respect to Manufacture, Shipment, Receipt, and Use.

Annual Meeting of ASTM

SEEING "a definitely increased tempo in standardization activities during the last decade," the American Society for Testing Materials announces approval of 57 new specifications at its annual meeting held during the week of June 18. Revisions in more than 200 existing tentatives and standards were acted on, the Society reports. About 75 specifications and tests published previously as tentatives were approved for reference to letter ballot of the Society. Now 1775 standards compare with 1045 in 1941.

Among the five long-time members of the Society who were honored at the annual meeting for "especially meritorious service" was Harold H. Morgan, Vice-President and General Manager, Robert W. Hunt Company, Chicago, Illinois. Mr Morgan is a former member of ASA's Board of Directors, an ASTM past-president, and served as chairman of ASTM Committee A-1 on Steel for many years. He was given an Honorary Membership by the Society.

In its Annual Report, the ASTM Board of Directors noted that the services of the Society have been offered to many agencies of the Government, including the Armed Services. Emergency procedures have been established to provide for issuance of emergency alternate provisions to aid in production and to conserve critical materials. This action was taken at the urgent request of several technical committees in such fields as rubber products, steel, and corrosion-resistant alloys.

The Emergency Provisions will be on a voluntary basis and are to be used "where the purchaser considers the requirements are permissible alternates for the application involved." Action for the development of Emergency Alternate Provisions or Emergency Specifications is initiated in a subcommittee of one of the main ASTM groups and must have letter ballot approval of the subcommittee. Two-thirds of the votes of consumer and public interest representatives, combined, and two-thirds of the producers' votes must be in the affirma-

tive. Secondly, the provisions must be endorsed by the chairman of the main committee or by a two-thirds affirmative vote in the main committee.

They are then to be submitted to the Administrative Committee on Standards with a detailed report and explanations of any negative votes, after which they will be published as a sticker or a sheet, as well as in the next issue of the ASTM *Bulletin*.

To remain in effect, Emergency Provisions and Specifications must be reviewed annually and reaffirmed by letter ballot of the main technical committee.

Fiftieth Anniversary Announced

The American Society for Testing Materials functioned as a committee from 1898, but was officially incorporated as a national technical Society in 1902. It will celebrate its fiftieth Anniversary during its 1952 week-long Annual Meeting in New York City, June 23-27. The meeting is to be centered at the Hotel Statler, with other nearby New York hotels cooperating.

Throughout the meeting the Tenth Exhibit of Testing Apparatus and Related Equipment and the biennial Photographic Exhibit will be in progress.

The ASTM Board of Directors is planning special events during this week. A number of leading scientists and engineers from abroad who have done important work in the field of materials are being invited to participate in the program.

New ASTM Officers

Election of Truman S. Fuller as president of the American Society for Testing Materials was announced at the 54th ASTM Annual Meeting. Mr Fuller is Engineer in Charge of Works Laboratory, General Electric Company, Schenectady, N. Y. He served as a member of the ASTM Board of Directors in 1939-1941 and again in 1947-1950 and was elected Vice-President last year. He has been an active member of a large number of ASTM technical committees, and served as chairman of Com-

mittee B-3 on Corrosion of Non-Ferrous Metals and Alloys from 1926 to 1940. During this period the committee inaugurated many extensive corrosion tests on non-ferrous metals and alloys, and conducted important outdoor exposure tests of coupled materials involving galvanic and electrolytic corrosion. He has served on Committee A-1 on Steel since 1938, and for many years on the Research Committee on Fatigue of Metals. Mr Fuller is also active in the American Society for Metals, American Institute of Mining and Metallurgical Engineers, the British Institute of Metals, and the British Iron and Steel Institute.

Leslie C. Beard, Jr, Assistant Director of Socony-Vacuum Laboratories, Socony-Vacuum Oil Company, Inc, New York, N. Y. was elected ASTM Vice-President. Dr Beard has been particularly active in Committee D-2 on Petroleum Products and Lubricants. He has been chairman of several of the subgroups and currently is First Vice-Chairman of the main committee. In addition to membership on technical committees covering gasoline, turbine oils, and illuminating oils, he is active in research work on flow properties. He serves on the New York District Council of ASTM and is a member of the ASTM Administrative Committee on Research.

New members of the ASTM Board of Directors are:

John W. Bolton, Director of Metallurgical Research and Testing, The Lunkenheimer Company, Cincinnati, Ohio

Rudolph A. Schatzel, Vice-President and Director of Engineering, Rome Cable Corporation, Rome, N. Y.

E. O. Slater, President and Manager, Smith-Emery Company, Los Angeles, California

Stanton Walker, Director of Engineering, National Sand and Gravel Association, Washington, D. C.

F. P. Zimmerli, Chief Engineer, Barnes-Gibson Raymond, Division of Associated Spring Corporation, Detroit, Mich.

Recent Rulings on Unusual Accidents

The Committee of Judges of ASA Sectional Committee Z16 on accident statistics have recently handed down the following interpretations. The American Standard Method of Compiling Industrial Injury Rates, Z16.1-1945, offers generally accepted rules for keeping track of a company's safety record.

Interpretations of the standard can be obtained by sending the facts on doubtful cases of injuries due to unusual accidents to the American Standards Association. Reprints of all the published decisions can also be obtained from ASA.

CASE 105. An employee was overcome by what was believed to have been carbon monoxide during the cleaning of a tank car. He was rescued by his fellow workers in an unconscious condition. Immediately after the man was taken from the tank car, resuscitation equipment was used and oxygen was administered. When the employee resumed normal breathing he was taken to the hospital and there regained consciousness several hours later. The physician who administered treatment reported in writing that the man was given further oxygen at the hospital and kept there for observation. The weather the following day was inclement. Although the doctor had planned to discharge him early in the morning, his discharge from the hospital was delayed; because of the inclement weather, until the weather cleared in the afternoon. The doctor further stated "... because of our caution this involved a one-day-loss-of time case as the man was able to return to work the following day."

The company recalled that 3.4.3 of the standard provides that if, after observation for a period not to exceed 48 hours from the time of an injury from the inhalation of harmful gases known to have a delayed effect, the physician determines that the injury was in reality slight and that the injured person could have returned to work without any permanent impairment or temporary total disability, then the injury shall be classified as a medical treatment case. The company asked whether, in view of the above facts, the injury in question should be considered as a "lost time accident."

The committee agreed that this should be considered a lost time injury. In coming to this decision, some of the members stated that they did not believe that carbon monoxide came within the classification of gases known to have a delayed effect and they believed that this employee had been sent to the hospital for treatment rather than for observation.

CASE 106. An equalizer operator in a cooperative plant was tending to his regular work one winter morning when he temporarily ran out of staves to process. While

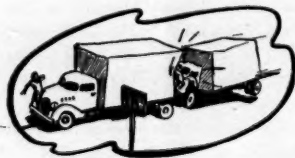
awaiting the arrival of another truck load of staves, and since it was very cold that morning, the employee decided to walk approximately 100 feet to another department to warm himself against a kiln door. Upon leaning against the door, it came down, striking him across the back, fracturing his fourth and fifth vertebrae.

Working rules of the company, which were prominently posted, contained, among others, the following prohibition:

"Changing working places without orders or prowling around the plant away from assigned places."

Investigation revealed that it was not a common practice for employees to warm themselves in or near the kiln on cold days and it was, in fact, a practice that was discouraged. The company wanted to know if this case should be included in the injury rates.

The committee decided that this case should be included in the rates. The members were of the opinion that this employee's action in going to the kiln in order to get warm did not take him out of his employment. Some of the members commented that violation by an employee of a safe practice rule did not necessarily mean that a resulting accident should not be considered in the rates.



CASE 107. A salesman, while returning from a customer visit, stopped to help another motorist who had stalled beside the road. There was no indication that there was any customer relationship or even an acquaintance between the salesman and the motorist. The salesman was attempting to push the other car with his car. A wrecker then came along and bumped the salesman's car while he was standing between the bumpers of his car and the stalled car, pinching his leg between the bumpers and causing disability for several days. The company's compensation insurance carrier was given the claim and they proceeded to collect full costs from the third party carrier.

The company was interested in an interpretation as to how this accident should be reported from the standpoint of national comparisons and not from the compensation point of view. It would seem that the salesman was not engaged in "direct performance of his duties of employment" nor were there any specific instructions or company policies to instruct salesmen in a similar situation. Apparently this salesman acted of his own accord.

The committee agreed that this case should be counted in the rates, in accordance with paragraph 2.1.5 of the standard. The members believed that it was the intent of this paragraph to cover borderline

situations, as occurred in this case.

CASE 108. A stockkeeper stated that on January 10, he and a co-worker were lifting and sliding 20-ft angle bars weighing about 200 lb onto a truck. He further stated that while simultaneously lifting and dragging one such piece, he suddenly felt a sharp "catch" or pain in his right side and groin, and that he stopped the lifting and loading work at that time to ease his pain. The employee did not mention any pain or injury to his co-worker or supervisor at the time, and did not report to the Medical Department until the following day at 2:35 p.m. after notifying his supervisor. His co-worker's statement substantiated the fact that the above described work was performed, and said that "Mr. — stopped work as we were about finished the loading and left the remainder of the work (lifting) to me, but continued to offer some assistance by using an iron pry. Mr. — did not complain of an injury but I suspected that he was not feeling well since he quit lifting."

The initial examination on January 11 (Wednesday) by the physician disclosed "no evidence of hernia," but did show a "strain, right upper groin." The employee was returned to modified work and he returned to Medical for scrutiny on January 12 and January 13 (Thursday and Friday). He did not return to work on his next regularly scheduled work day (Monday, January 16), nor until the following Monday, January 23. On January 16, however, he sent word to his supervisor by another employee that "he was feeling very bad and was going to see a doctor." According to the employee's statement, he had already consulted his personal physician on Saturday, January 14, and on January 17 he was examined by another outside doctor who, he stated, "suggested I had a hernia condition." When he returned to the job and again reported to Medical on January 23, he was referred to Dr. — whose diagnosis indicated that the employee had a small hernia.

When this case was submitted, the employee still was not convinced that he had a hernia. He wanted to wait another week for re-examination by Dr. — before submitting to surgery. In the interview, he also discussed his previous work in the coal mines, his previous experiences with stomach disorders and spasms of pain with shortness of breath, and the rigid industrial medical examinations he had had which never disclosed a hernia condition during his coal mining days.

It could not be determined from investigation of this case whether the hernia condition, if substantiated medically, resulted from the work being performed on the date involved for the following reasons:

- (1) The hernia condition was not indicated on the initial medical examination on January 11, 12, or 13. The first such indication to Medical department was on January 23, thirteen days after the date the employee felt he injured himself, and following a nine-day period when

- he remained at home voluntarily.
- (2) The type of work being performed could have caused a hernia, but a clear picture of accident was not present because the employee said nothing of pain or injury to his co-workers or supervisor at the time, and did not report an injury until the afternoon of the following day.

The committee agreed that the case, as submitted, indicated a clear history of an accident arising out of and in the course of employment. It was suggested that the company look to its medical department for more positive information as to whether this accident had resulted in a hernia.

If the doctors decided that this case actually was a hernia, then the time charge for this case should be 50 days, in accordance with 4.4.1 of the standard. If, on the other hand, they reported that this was not a hernia, then the actual days lost should be shown as the temporary total disability charge for this accident.



CASE 109. An advertising man was setting up a display in a distant city on January 17. The display was being set up on a table. A chair placed next to this table caused the employee to reach across the chair in order to pick up some thumb tacks. In reaching, his weight was mostly on his right leg. There was no accident (i.e., he did not hit his knee). However, as he reached over the table to a distance of about three or four feet from the point where he was standing, he felt a snap in his knee.

It pained him somewhat momentarily, but the pain was not very severe. However, as the afternoon progressed, the sensation of pain increased. On the following morning he found it difficult to walk and used a chair which he pushed in front of him as he moved along the hotel corridor. In the afternoon he was transported to a doctor who aspirated the knee and removed 100 cc of blood. The knee was then placed in a cast. He returned to his home town on Saturday, January 21. He did not report to the office until the afternoon of January 25, and on Friday, January 27, he was referred to an orthopedic specialist, who diagnosed the case as "internal derangement of the right knee."

The employee said that many years ago he had injured his knee and had recurrences of the knee giving way, but not as severe as at this time.

The company stated this type of injury was most difficult to consider as a lost time accident with the resultant reflection in frequency rate.

The committee ruled that this case should be counted in the rates, based upon the opinion that this employee's work had

contributed towards his injury, probably aggravating a pre-existing weakness.

CASE 110. An electric power company had 22 trees along its high voltage transmission line that had to be removed to avoid possible interference with the wires. The power company made a lump sum contract with a contractor to remove the trees. The contract required the contractor to provide his own workmen and to carry workmen's Compensation and Liability Insurance.

The contractor attempted to get the insurance but was unable to provide insurance satisfactory to the power company. The power company then agreed to pay the contractor's three workmen on the power company payroll so that there would be no question regarding the insurance coverage.

The job progressed satisfactorily until the last day when one of these workmen cut his foot with an ax, resulting in the loss of several weeks time.

The power company wanted to know if they were supposed to include this injury in their rates. The company emphasized that this man was only on their payroll for insurance purposes. Actually, he was an employee of the contractor and the power company had not had any supervision or control over this employee.

The committee agreed that this injury should be included in the rates of the power company. The committee came to this conclusion in the belief that a person who is on a company's payroll should be considered an employee of that company. Because of the particular circumstances, they have discounted the contractual relations in this set-up.

CASE 111. A female employee had been assembling the field windings and bases of small electric motors for about six months. The company gave a complete description of her job, which culminated with the driving of four screws to hold the parts together. The parts were held in a bench fixture. The four screws were driven with a pneumatic power driver. The tool was supported by a counterbalance and hung from above. In driving the screws this tool was held in the right hand while the left hand steadied the assembly in order to reduce vibration.

The employee reported to the plant doctor that on the previous day she had started having a pain in her left thumb. The condition was diagnosed as mild tenosynovitis of the flexor tendon. She was given selective work; however, in about two weeks it became necessary to operate on the thumb. She remained in the hospital two days and returned to work after a total of ten days.

The company remarked that a condition of this type was most difficult for any management to control or prevent. They asked if this should be considered a lost time injury in the rates.

From the evidence submitted, the committee came to the conclusion that this injury probably resulted from the work and therefore should be included in the rates.

CASE 112. A company asked for an interpretation of 2.7 of the standard. Two employees of the company were fatally injured

as occupants of an aircraft which was involved in an accident in flight. The employees were in performance of duty while accompanying a shipment which was being made by an unscheduled aircraft flight from one location to another.

The ill-fated aircraft was operated by a pilot-employee of an air service which, under contract to the Atomic Energy Commission, furnishes airplane transportation to the company and to certain of its other companies at stipulated rates per hour of flight. The air service-contractor was required, under the terms of the contract, to maintain aircraft in first class flying condition, to equip and operate aircraft in accordance with regulations of the Civil Aeronautics Authority, and to hold the company harmless from all claims of death and injury to persons and damage to property, except with respect to liability of the company to its own employees. The contract provides also that the pilot of the first of any planes used shall have logged a minimum of 4,000 flying hours, 1,000 hours of which were to have been flown over the type of terrain involved.

During the course of the contract, definite schedules were made and operated for flights between two locations. (The flight during which the accident occurred was not a scheduled flight and involved only one of these two locations.) The contract was then amended to permit the air service-contractor to sell to the general public space not required by the company on these scheduled flights. The contractor became a common carrier between these two intrastate points and obtained necessary authorization from the State for common carrier operation.

Decision was requested as to whether the deaths of the two company employees in the airplane accident should be reported as industrial injuries.

The committee decided that the two death cases should be considered as arising out of and in the course of employment. The committee did not believe that these were injuries resulting to passengers on a common carrier and therefore they should be included in the rates.



CASE 113. A company asked for a ruling on the following hernia case: Employee concerned was hired on November 6, in the classification of controlman on one of the units in the Plant which was not yet entirely in operation.

At the time of hiring, employee was given a regular physical examination which he passed with a high rating. Physical examination record showed: Hernia—None; Inguinal Rings—Medium; Supporting Structure—Strong.

(Continued on page 263)

Standards From Other Countries

MEMBERS of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received.

For the convenience of our readers, the standards are listed under their general UDC classifications.

003.62 Signs Notations, Symbols

AUSTRIA	ÖNORM
Letters and Symbols for Units, Formulas, etc	A 6402
ITALY	UNI
Graphical Symbols for Railroad Telecommunication Systems	3112
RUMANIA	STAS
Mathematical Symbols	1254
Rules for Writing and Printing Formulas	1508

389.6 Standardization

CHINA	CNS
Preferred Numbers	1 Z1
Preferred Diameters and Linear Lengths	2 Z2
Inch/Millimeter Conversion Table	37 Z3
Classification of Standards	88 Z9
Numbering of Standards	89 Z10
Reference Temperature	35 B7
GERMANY	DIN
Rules for Preparation of Standards	820 B1.1

621.13 Railway Steam Locomotives

RUMANIA	STAS
Locomotive Fittings, Crown Stays	1529
UNITED KINGDOM	BS
Staybolts for Locomotive Boilers, Normal and Special Types	25013/4
Tolerances for Locomotive Wheel Cranks	25018

621.3 Electrical Engineering

AUSTRIA	ÖNORM
Direction of Rotation of Automobile Dynamos, Starters and Magnets	V 5411

CHINA	CNS
Wire Gages	31 C1
Copper Resistance	32 C2
Nominal Voltages of Power Lines	33 C3
Direction of Rotation of Controllers	39 C4
Standard Frequencies	42 C5
Specifications for Ordering Electrical Equipment	102/108 C6/12

FRANCE	NF
Rules for the installation of Heavy Apparatus for Voltages up to 4500 v dc and up to 1000 v ac. Part 1: circuit breakers and switches	C 45-1
Rotating Electric Machines of General Use. Mounting and Coupling Dimensions	C 51-101
Three-phase Asynchronous Motors of General Use and Medium Power. Mounting and Coupling Dimensions	C 51-102

GERMANY	DIN
Brush Holders, Different Types	43050/1
Electric Locomotives, Street-cars and Trolleybuses	43100
Cable Terminal Boxes (Pot-heads)	43627,B1.1
Cable Junction Boxes	47600/1
Cable Branch Joint Boxes	47621,B1.1
Pin Insulators, Type RMd	48141
Pin Insulators, Type RMü	48145
Lightning Arresters, Ferrules for—	48818/9, 48826,48828, 48836,48845/6, 48850/2

Delivery Specification for Insulating Sheathing Types A and B	40621,B1.1,2
Asynchronous Three-phase Squirrel Cage Motors Ordinary and Enclosed Types	42670/1
Preferred Power Ratings of Asynchronous Three-phase Squirrel Cage Motors	42971
Performance Characteristics of Street-car Motors 600 v, 60 kw, 830 r/m	4321,s,2
Bipolar Receptacle 500 v 60 amp	43571,B1.1,2
Thermocouples, Different Types	43710
Protective Metal Cap for Thermocouples	43720
Insulating Part for Thermoelement according to DIN 43733	43725
Insertion Thermoelement for Electric Thermometer	43735
Insertion Resistance Element for Electric Thermometer	43762
Resistance Type Pyrometers, Without Protective Sheathing	43769
Ceramic Insulating Heating Element Supports	44926
Bipolar Regulating Switch 15	

amp 250 v dc and ac	49280
Electric Lamps. General List of Types and destinations	49800
List Showing Metal Content in Various Lead Storage Batteries	40731
Transformers for Service in Salt Manufacturing Plants Air-Cooled, 20-160 kva, 50c	42525, B1.1
Transformers, Open-Air Type, with Oil-self-cooling, Copper Winding, 16% c. 125 kva	42527

ISRAEL	SI
Wall Switches	33

POLAND	PN
Portable Electric Furnace up to 4 kw	T-39000
Three Types of Protective Caps for Electric Cables of Automotive Vehicles	S-76009
Installation of Telecommunication Wires	T-05000

RUMANIA	STAS
Electro-insulating Materials. Physico-Mechanical and Chemical Tests	1292
Masts for Overhead Lines Attached to Buildings	1307
Universal Clamp for Overhead Lines up to 1 kv, 95 sq. mm Cross Section	1368
Base-rails Adjustable from 450 to 1285 mm, for Rotating Electric Machines	1399
Binding Post, Switchboard Type, up to 200 amp and 500 v	1442
Wheels and Wheel Tracks for Oil Transformers	1443
Rules for Construction of Overhead Power Lines (Recommended Std.)	1444
Rules for the Construction of Overhead Electric Lines. Characteristics of Conductors	1531
Rules for Maintenance of High Voltage Overhead Lines	1551

SPAIN	UNE
Transforme-Oil Specifications	20002
Flexible Copper Tape	20029
Standard Electric Currents	20040

621.643 Conduits, Pipes and Accessory Parts

FRANCE	NF
Seamless Cold-drawn Steel Pipes for Conveying Fluids	A 48-001
Seamless Hot-drawn Steel Pipes for Conveying Fluids	A 48-002
Seamless Cold-Drawn Steel Pipes for Mechanical Purposes	A 48-003
GERMANY	DIN
Seamless Steel Pipes, Nominal Pressure 1 to 100	2442

Cast Iron Elbows, Type "A"	2652	POLAND	PN	Milling Cutter, Milled and Form-relieved for Tools with Form-relieved Teeth	1824
Seamless Steel Pipes for Nominal Pressure 1 to 100	2451	Metric Screw Thread, Theoretical Dimensions	M-02005	Table Showing the Application of Tools of Type NHW	1836
NETHERLANDS	N	Upholsterer's Tacks	M-81025	Metal Slitting Saws with Fine Teeth	1837
Connecting Dimension of Flanges for Pressures I-40; II-32; III-32	1536	Metric Screw Thread, Series B	M-02007	Metal Slitting Saws with Coarse Teeth	1838
Cast Iron Flanges for Pressure I-6	1537	Metric Screw Thread, Series D	M-02009	Metal Slitting Saw, Form of Teeth and Direction for Grinding	1840
Cast Iron Flanges for Pressure I-10	1538	Metric Screw Thread, Series F	M-02011	Taper Spindle Noses and Arbors for Milling Machines	2079/90
Cast Steel Flanges for Pressure I-16; II-5	1539	Finishing Nails	M-81023	Taper Adaptors for Straight Shank Tools	6329
Cast Steel Flanges for Pressures I-16; II-13	1540	RUMANIA	STAS	Oiling and Greasing Diagram for Machine Tools	8659
Cast Steel Flanges for Pressures I-40; II-32; III-32	1541	Spring Washers used in Railroad Construction	1384	ITALY	UNI
Cast Steel Flanges for Outboard Connection for Pressure I-6	1542	Wood Screws, Classification	1450	Milling Machine, Nomenclature of component Parts	3086
Welded Flanges without Collar for Pressure I-6; II-5	1544	Square-head Wood Screws	1455	Sense of the Movement of Table in relation to Rotation of Machine	3087
Rolled-in Flanges with Collar, for Pressure I-6; II-5	1545	Round Head, Fin-Neck Plow Bolts, Metric Thread	1470	Milling Machine Arbors, Collects, Adaptors, etc.	3088-3095
Rolled-in Flanges with Collar, for Pressure I-40; II-32; III-32	1546	Flat-head, Fin-neck Plow Bolts, Metric Thread	1474	POLAND	PN
Flanges Welded on Boiler, etc. for Pressure I-6; II-5	1547	Flat-head, Fin-neck Plow Bolts, Whitworth Thread	1475	End Mills, Straight and Morse Taper Shanks, R.H., L.H.	M-57430/1/2
Blind Flanges for Pressures I-6; II-5	1548	Straight Pins	1599	Slot Drills, Straight Shanks	M-57436
Blind Flanges for Pressures I-16; II-13	1549	Parallel Keys with Rounded Ends	1006	Hand Taps, Whitworth Thread	M-57841
Blind Flanges for Pressures I-40; II-32; III-32	1550	Wood Screws	1453/4	Machine Taps, Whitworth Thread for Nuts	M-57845
Flat Packings and Grooved Flanges for Pressures I-6; II-5; I-16; II-13; I-40; II-32; III-32	1551	Different Types of Bolts, Metric and Whitworth Threads	1471-1473, 1476/7	Hand Taps, Pipe Thread for Blind Holes	M-57920
621.88 Means of Attachment. Fastenings		Lag Screws	1521	Round Dies, Whitworth Thread	M-58100
AUSTRIA	ÖNORM	621.9 Machine Tools. Tools, Operations, in Particular for Metal and Wood		Round Dies, Pipe Thread	M-58160
Machine Screws with Slotted Knurled Head Sizes M1 to M10	M 5140	AUSTRIA	ÖNORM	Reamers for 1:30 Taper	M-58997
Machine Screws with Knurled Head sizes M1 to M10	M 5141	Hand Reamers, Non-adjustable	M 4245	Twist Drills, Straight Shank	M-59640
Slotted Stud	M 5146	CHINA	CNS	Counterbores, Different Types	M-59722/3/5
Set Screws, Different Types	M 5167/8/9	Squares for Spindles, Crank Handles, Tool Shanks	66/7 B9/10	Taper Reduction Sleeves	M-60554
Washers, Unfinished	M 5287	Standard Tapers, Taper Shanks	68,69 B11/2	Three Types of Carpenter's Chisels	D-54440, 54452, 54454
Washers, Finished	M 5290	Center Keys	72 B13	Four Types of Planes	D-54560
Rivets	M 5322/3	Knurls and Knurling Tools	75/6 B14/5	Plier-type Punch for Eyelets	N-56004
Self-tapping Drive Screws	M 5365	Minimum distance between Bolts	79 B 16	Two-jaw Chuck	O-54030
Straight Pins	M 5402	Specifications for Reception of Machines	94-101	Taper Shanks, Morse and Metric	M-55020
CHINA	CNS	Adjustable Collars	B17-24	Milling Machine Arbor Ends	M-55082
Standard Widths across Flats and Wrench Openings	65 B8	Machine Tapers	120-122	Different Types of Burrs	M-57329
Wrenches and Screw Drivers	133-145	Lathe Centers	B25-27	Metric Taps	M-57801
Axle Heights of Machines	146 B51	Radii for Rounding	123-130	Machine Taps for Nuts	M-57805
Shaft Ends	147/8 B52/3	GERMANY	DIN	Round Metric Dies	M-58070
Washers: Unfinished, Semi-finished, Round, Square for Bolts and Nuts	150-157	End Mills with Morse Taper Shank	326	Scraper Blades, Type "Maaga"	M-58506
Lock Washers, Different Types	B55-62	End Mills with Straight Shank	327	Blacksmith's Square-and-Round-Point Hammers	M-63485/6
Keys and Keyways	158-162	Drills and Punch Diameters for Tapped Holes	336	RUMANIA	STAS
GERMANY	DIN	Feeds for Machine Tools	803	Centers for Reamers and Arbors. Dimensions	1361
Round Screwthread for Glass and Similar Articles	168, B1.1	Spiral Cut End Mills with Straight Shank	844	Twist Drills and Countersinks. Classification	1362
Knuckle Thread with Large Depth of Engagement Used in Mining Engineering	20400	Spiral Cut End Mills with Morse Taper Shank	845	Twist Drill for Center Drilling 60° and 120° Countersinks with Morse Taper Shank	1363
		Double Angle Milling Cutters	847	Tee-Slots, Form and Dimensions	1385
		Slotting Milling Cutter	850	Abrasive Materials. Classification and Terminology	1469
		Metric Thread Cutting Mill	852	Saw Blades for Metal. General Requirements	1522
		Different Types of Milling Cutters	857	Circular Saws	1071
		Plain Milling Cutters	884	Foresters' Axe	1360
		Side Milling Cutters	885	Center Drills	1363
		Tapping Mill with Straight Shank	887	Twist Drills; Form and Basic Design	1370
		Tapping Mill with Morse Taper Shank	888		
		Angle Milling Cutter	1823		

• • **Gaillard Seminars** — Eleven conferees attended the private seminar on industrial standardization held in New York, June 18 through 22, by Dr John Gaillard, mechanical engineer on the ASA staff and lecturer at Columbia University. The following organizations were represented:

Aluminum Company of America
Capehart-Farnsworth Corporation
Ethyl Corporation
Pullman-Standard Car Manufacturing Company
Servomechanisms, Inc.
E. R. Squibb & Sons International Corporation
Sylvania Electric Products, Inc.
U.S. Army Transportation Corps
Universal Winding Company

The Warner & Swasey Company
Wheeling Steel Corporation

Three of these organizations had been represented on previous occasions.

The seminar dealt with the organization of standardization work in an individual company and the technique of writing standard specifications. Another session will be held along similar lines in New York, January 21 through 25, 1952. Places may be reserved in advance. For registration details, phone Dr Gaillard at ASA headquarters, Murray Hill 3-3058, or write him at his home address, 400 West 118 Street, New York 27, N. Y.

Fluorescent Lamps

(Continued from page 250)

ability cannot be realized. This fact is, of course, fully appreciated by the various committees responsible for the preparation of standards on electric discharge lamps and associated auxiliaries and work along these lines has been in progress for some time.¹ As the standards for ballasts, starters and lampholders become available all of the advantages which the consumer now enjoys due to standardization of incandescent lamps will be realized for fluorescent lamps.

¹"Case history of the Standards on Electric Discharge Lamps" by George L. Digles, STANDARDIZATION, July 1949.

AMERICAN STANDARDS

Status as of July 3, 1951

Legend

Standards Council — Approval by Standards Council is final approval as American Standard; usually requires 4 weeks

Board of Review — Acts for Standards Council, gives final approval as American Standard; action usually requires 2 weeks

Correlating Committees — Approve standards to send to Standards Council or Board of Review for final action; approval by correlating committee usually takes 4 weeks

Building

American Standards Just Published—

Building Exits Code, NFPA101; ASA A9.1-1951 \$1.00

Sponsor: National Fire Protection Association

Specification for Asphalt Plank, ASTM D517-50; ASA A37.48-1951 \$.25

Sponsor: American Society for Testing Materials

In Correlating Committee—

Building Code Requirements for Reinforced Concrete (Revision of ACI 318-47; ASA A89.1-1948)

Sponsor: American Concrete Institute

Electrical

In Correlating Committee—

Acoustical Terminology, Z24.1

Sponsor: Acoustical Society of America

Submitted to ASA for Approval—

Preferred Voltage, 100 Volts and Under, C67.1

Sponsor: Electrical Standards Committee

Gas Burning Appliances

In Board of Review—

Approval Requirements for Central Heating Gas Appliances, Z21.13 (Revision of Z21.13-1945 and Z21.13 a and b-1950)

Approval Requirements for Gas Unit Heaters, Z21.16 (Revision of Z21.16-1940, R1947)

Listing Requirements for Automatic Pilots, Z21.30 (Revision of Z21.30-1940, R1947)
Addenda to American Standard Approval Requirements for Gas Water Heaters, Z21.10-1950, Z21.10

Sponsor: American Gas Association

Graphical Symbols

In Correlating Committee—

Graphical Symbols for Single (One) Line Electrical Engineering Diagrams, Z32.1.1

Sponsors: American Institute of Electrical Engineers; American Society of Mechanical Engineers

Motion Picture

American Standards Just Published—

Cutting and Perforating Dimensions for 32-mm on 35-mm Motion Picture Negative Raw Stock, PH22.73-1951 \$.25

Zero Point for Focusing Scales on 16-mm and 8-mm Motion Picture Cameras, PH22.74-1951 (Revision of American War Standard Z52.51-1946) \$.25

Mounting Threads and Flange Focal Distances for Lenses on 16-mm and 8-mm Motion Picture Cameras, PH22.76-1951 (Revision of American War Standard Z52.50-1946) \$.25

Sponsor: Society of Motion Picture and Television Engineers

In Correlating Committee—

Sound Transmission of Perforated Projection Screens, PH22.82

Sponsor: Society of Motion Picture and Television Engineers

Office Equipment

American Standards Just Published—

Size Designation for Index Cards and Record-Keeping Cards, X2.4.1-1951 \$.25
Dimensions of Desks and Tables for General Office Use, X2.1.1-1951 \$.25

Sponsor: National Office Management Association

Photography

American Standards Just Published—

Dimensions for Film Pack, Z38.1.1-1951 (Revision of Z38.1.1-1941 and Z38.1.2-1941) \$.25

Dimensions for 35-mm Magazine Film (For Miniature Cameras), Z38.1.49-1951 (Revision of Z38.1.49-1948) \$.25

Dimensions of Photographic Double Film Holders of the Lock-Rib Type, Z38.1.51-1951 \$.25

Dimensions of 16-mm 100-ft Film Spool for Recording Instruments and Still Picture Cameras, Z38.1.52-1951 \$.25

Dimensions of 16-mm 200-ft Film Spool for Recording Instruments and Still Picture Cameras, Z38.1.53-1951 \$.25

Dimensions of 35-mm 100-ft Film Spool for Recording Instruments and Still Picture Cameras, Z38.1.54-1951 \$.25

Dimensions of 70-mm 100-ft Film Spool for Recording Instruments and Still Picture Cameras, Z38.1.55-1951 \$.25

Sponsor: Optical Society of America

What's New on American Standard Projects

Safety Code for Construction, Care and Use of Ladders, A14—

Sponsors: American Society of Safety Engineers; National Association of Mutual Casualty Companies

As a result of the recent A14 meeting, a revision of the American Standard Safety Code for Wood Ladders, A14.1-1943, will be undertaken. The committee also agreed that a standard on metal portable ladders should be developed based on the recommendations it received from the Metal Ladder Manufacturers Association.

The need for a standard on fixed ladders was also agreed upon. However, the committee decided to postpone this work temporarily.

Standardization and Unification of Screw Threads, B1—

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

At the recent conference held in London between American, British, and Canadian delegates to discuss the unification of bolt head and nut dimensions, informal agreement was reached on the desirability of changing the pitch of the 1/2 inch coarse thread in the Unified Screw Threads from 12 to 13 threads per inch.

Safety Code for Mechanical Power Transmission Apparatus, B15—

Sponsors: American Society of Mechanical Engineers; Accident Prevention Department, Association of Casualty and Surety Companies; International Association of Government Labor Officials

A proposed new edition of this code has just been approved by the B15 sectional committee and is being sent to the sponsors. If approved by the sponsors, it will be submitted to ASA for approval as an American Standard.

Safety Code for Compressed Air Machinery, B19—

Sponsors: American Society of Mechanical Engineers; American Society of Safety Engineers

The draft of a proposed revision of the American Standard Safety Code for Compressed Air Machinery and Equipment, B19-1938, has been prepared and circulated to members of the B19 committee.

Rubber Protective Equipment for Electrical Workers, J6—

Sponsors: American Society for Testing Materials; Edison Electric Institute

Copies of the proposed American Standard Specifications for Rubber Protective Equipment for Electrical Workers: Rubber Insulating Gloves, J6.6, have been sent to members of the J6 committee for approval. If approved, the standard will be sent to the sponsors for submittal to ASA. This standard is a revision of the American Standard Specifications for Electrical Gloves, C59.12-1942.

Storage and Handling of Anhydrous Ammonia and Ammonia Solution, K61—

Sponsor: Compressed Gas Association

The first meeting of this newly organized sectional committee was held June 25 at the headquarters of the Compressed Gas Association. F. R. Fetherston, Secretary-Treasurer of CGA, was chairman of the meeting.

The committee adopted the tentative scope agreed upon by a general conference which requested initiation of this project. However, it made a few minor changes in wording to clarify K61's field of activity. The revised scope will now be transmitted to ASA for approval. The tentative scope covered: "Safety standards pertaining to the design, construction, location, installation, and operation of anhydrous ammonia systems, and transportation and storage of anhydrous ammonia and ammonia solutions, but not pertaining to ammonia manufacturing plants, refrigerating or air conditioning systems."

A draft standard prepared by a technical committee of CGA was discussed as a basis for work in devel-

oping an American Standard. As a result of this discussion, subcommittees will be established to develop recommendations on controversial sections of the proposed standard. The next meeting of the committee will probably be held in the early fall.

Photographic Apparatus, PH3—

Sponsor: Photographic Standards (Correlating) Committee

Letter ballots on the proposed reaffirmation of three American Standards have just been sent to members of the PH3 Committee. The American Standards involved are: Specifications for Printing Frames, Z38.7.11-1944; Method for Determining Resolving Power of Lenses for Projectors for 35-Mm Slidefilm and 2 x 2-Inch Slides, Z38.7.16-1947; and Dimensions of Front Lens Mounts for Cameras, Z38.4.10-1944.

Drawing and Drafting Practice, Y14—

Sponsor: American Society of Mechanical Engineers

Progress was reported by the Executive Committee of Y14 which met recently in Lansing, Michigan. Six of the proposed 16 sections of the new revision of the 1946 standard are in draft form.

When completed, the 16 sections will cover all aspects of drawing and drafting.

Optics, Z58—

Sponsor: Optical Society of America

The proposed American Standard Nomenclature for Radiometry and Photometry, Z58.1.1, has just been sent to letter ballot of the Z58 sectional committee. This proposed standard indicates the terms used to describe radiometry and photometry processes, devices, quantities, and properties of devices. The symbols used in connection with the quantities and properties of devices are in accordance with the American Standard Letter Symbols for Heat and

Thermodynamics, Including Heat Flow, Z10.4-1943, and the American Standard Letter Symbols for Physics, Z10.6-1948. If approved by the sectional committee, the standard will be sent to the sponsor for submission to ASA.

Motor Oil Cans—

A drafting committee has been named to draw up a proposed American Standard for the diameter and height of 1-quart, 1-gallon, and 5-quart motor oil cans. Chairman of the committee is R. Chester Reed of the Texas Corporation. This implements action taken by a General Conference May 24, as reported in STANDARDIZATION, July, 1951, page 224.

Chemical Industry Correlating Committee—

At its June 19 meeting, the CICC voted to expand its membership to include the rubber manufacturers. As a result of this decision, an invitation is being sent to the Rubber Manufacturers Association to appoint a member and alternate to the CICC.

Progress of the various CICC subcommittees was reported as follows:

Subcommittee on Stainless Steel Pipe and Fittings—

A questionnaire had been sent to users of thin wall stainless steel pipe and fittings in the chemical industry to determine what other materials and alloys were desired in thin-wall and other schedules. Replies received were discussed at the meeting. The subcommittee will correlate the information contained in the replies, and use it as the basis for future recommendations.

Subcommittee on Stainless Steel Analyses—

This subcommittee has just been organized to correlate the chemical industry views as a preliminary step toward agreement on standard analyses which differ from existing standard grades. New standard grades are required to combat the chemical industry's special corrosion and related problems. At their first meeting,

members had voted to make a broad survey of all chemical companies known to constantly order special analyses. Since the form (sheet, tubing, etc) frequently has a bearing on the analysis used, it was decided to request that the user's preference be indicated, classified both as to analysis and form. All data received will be tabulated to aid the subcommittee in reaching its conclusions.

Subcommittee on Unfired Pressure Vessels—

The members of this group are being canvassed for suggested modifications to sections of the ASME Code for Unfired Pressure Vessels, for suggested possibilities related to thickness of heat exchange tubing and design, and for test specifications for pressure vessels. When these data are organized, and have been agreed to by the chemical industry, the committee plans to use them as a basis for recommendations to the ASME Boiler Code Committee. At present, a number of specific requirements of the Code force the chemical industry to shop around for nonstandard or unnecessarily costly items. The committee hopes to come up with some reasonable and safe solutions both as to additional materials for inclusion, and modifications in design requirements as related to procurement.

Stainless Steel Valves and Fittings—

Approval as American Standard of the Manufacturers Standardization Society of the Valve and Fitting Industry's Standard SP-42, 150 Lb Corrosion-Resistant Cast Flanged Valves, Flanges, and Flanged Fittings has been requested by the CICC. Steps are being taken to implement this recommendation.

Designation of Surface Qualities—

The chemical industry is interested in having surface finish specimens for rolled products similar to those available from a variety of sources for machined finishes. The present manner of specifying surface finish employed in certain ASTM specifications on this subject are felt to be inadequate. This group is checking

with ASA sectional committee B46 on Classification and Designation of Surface Qualities to determine whether the present standard is applicable to rolled finishes. If the standard is not applicable, this group will request Committee B46 to develop an appropriate standard for measurement and designation of rolled finishes.

Subcommittee on Valves and Fittings for Hazardous Services—

This group will concentrate on preferred types of flanged joints, maximum pressures, and types of pre-formed gaskets for use with piping carrying hazardous gases and fluids.

Pressure Piping—

Representatives of the Synthetic Organic Manufacturers Association and the Manufacturing Chemists Association have been appointed members of Committee B31, Code for Pressure Piping, as a result of a request by the CICC. K. W. Mahan, American Cyanamid Company, will represent SOCMA, and J. J. Collins, E. I. du Pont de Nemours and Co, will represent MCA.

Post Holes

(Continued from page 240)

and unprofitable, are urged to read "The Strange Case of the Seven-Sided Post Hole," a booklet that has just been issued by the American Standards Association, Inc., of New York City.

Here in a witty hand-lettered text, and drawings that are really funny, the story is told of a mythical post-hole industry. By standardization it developed a post hole that stacked easily, would not roll off tables, could not turn in the ground, and was the easiest and cheapest to make. The grand old man of the post hole industry, Digby Postlethwaite, kept the bureaucrats at Washington from specifying a seven-sided post hole, instead of the sensible, standard six, when post holes in large quantity became needed for the country's defense. And at last the American Standard became the international standard for lap welded, butt welded and seamless post holes.

News Briefs

• • New Data in Drill Drivers—

A new American Standard for Drill Drivers, Split-Sleeve, Collet-Type, B5.27-1951, has just been approved by the American Standards Association. This type of driver is used in the automotive and mass production industries to drive straight-shank twist drills. It is particularly suitable for these industry groups because multiple-spindle drill heads can be designed with spindles on a very close center-to-center distance, and bushing plates do not have to be moved when drills must be replaced.

The assembly of drill and collet-type driver necessitates manufacture to close tolerances. The new American Standard insures that collets will fit drill shanks manufactured according to American Standard for Twist Drills, Straight Shank and Taper Shank, B5.12-1950.

The standard covers drill drivers in nominal sizes from 0.0390 to 0.6875 inches inclusive. It specifies dimensions controlling the assembly of the driver with straight shank drills; and the taper controlling the assembly of the driver with the drill press. It also contains recommendations for the material to be used, and its heat treatment; Rockwell hardness; finish; and marking.

A committee organized under ASA procedure and jointly sponsored by the American Society of Mechanical Engineers; the Metal Cutting Tool Institute; National Machine Tool Builders' Association; and the Society of Automotive Engineers developed this standard.

Standards developed under ASA procedure have to be agreed upon by all groups that are substantially concerned with the problem and with the scope and provisions of the standard. The consensus principle extends to the initiation of the work under ASA procedure, to the method to be followed in establishing a standard, and to the final approval of the standard.

• • Butt-Welding Fittings—A revised edition of the American Standard for Steel Butt-Welding Fittings, B16.9-1951, has just been approved.

These fittings are used for pipe lines for which mechanical joints are not solid enough and which need more permanent fittings, such as pipelines carrying very high temperatures; pressure steam lines; cross-country lines; and all oil refinery pipe lines.

In the new edition all series of fittings are given in sizes from 12 to 24 inches, inclusive. The standard contains tables for tolerances; long radius elbows; 180-degree returns; straight tees; reducing outlet tees; lap-joint stub ends; caps; and reducers.

For the first time, heavy wall caps are listed. A complete series of 78 reducing outlet tees, from 1 to 24 inches, has also been added.

An appendix to the standard contains tables giving the dimensions of welded and seamless steel pipe, listed by American Standard schedule numbers and by the traditional designations—standard, extra strong, and double extra strong.

A committee organized under ASA procedure and jointly sponsored by the American Society of Mechanical Engineers; the Manufacturers Standardization Society of the Valve and Fittings Industry; and the Heating, Piping, and Air Conditioning Contractors National Association developed this standard.

• • Inspection of Fine-Pitch

Gears—The American Standards Association announces approval of a standard for Inspection of Fine-Pitch Gears, B6.11-1951, covering general gears; spur and helical gears; worms and worm gears; bevel gears; backlash in gears; comparator layouts; gear blanks for fine-pitch gears; pin measurements; fine-pitch master gears; and surface roughness of gears. Fine-pitch gears are defined

as gears of 20-diametral pitch and finer.

Two standards for inspection of fine-pitch gears were developed by the American Gear Manufacturers Association during World War II in answer to the urgent need for this material. Fine-pitch gears are essential in the manufacture of computing devices, fire control instruments, small automatic mechanisms and other precision instruments.

The new American Standard is based on a combination of the AGMA standards. However, a completely new section on surface roughness requirements for gears has been included. The recommended maximum roughness height values range from $\frac{1}{2}$ to 1,000 microinches, and the recommended maximum waviness height values from 0.00002 to 0.020 inches. Also included in this new section are: definitions; specification of roughness width, waviness width, height of roughness and waviness, and lay; measurements or evaluation of roughness; surface symbols; symbols indicating direction of lay; and symbols indicating gear tooth zone.

This standard is part of the gear standardization program developed by a committee organized under the procedure of the American Standards Association, and sponsored by the American Gear Manufacturers Association and the American Society of Mechanical Engineers.

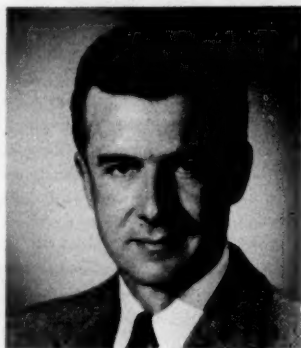
New Standards available—

B5.27-1951 at \$0.45 a copy;
B6.11-1951 at \$2.50 a copy;
B16.9-1951 at \$0.75 a copy
from the American Standards Association or the American Society of Mechanical Engineers.

• • Greetings from the American Standards Association were extended to the Third World Petroleum Congress at The Hague, Holland, May 31, by Frank M. Porter, Vice-President of the Congress for the United States. Some 2500 representatives attended. In his remarks at the official banquet, Mr Porter said, "Today we cannot think of the [petroleum]

industry in our own particular country as a unique, separate entity—it is definitely an interdependent segment of a world-wide industrial enterprise dedicated to a never-ceasing effort to better man's welfare and lighten his burdens. That is why the work of the World Petroleum Congress is of untold value. Here we are privileged to learn of the technical discoveries and advances, the experimental studies, and the activities of the world oil industry."

• • **Newly elected chairman** of ASA's Consumer Goods Committee is Richard S. Burke, Manager, Merchandise Testing and Development Laboratories, Sears, Roebuck and Company, Chicago. Mr Burke has been with Sears since 1929, with the exception of 23 months which he spent as a lieutenant in the Naval Aviation Supply Office in Philadelphia during World War II.



Richard S. Burke

Chairman, Consumer Goods Committee, has had long experience in merchandising with Sears, Roebuck and Company

A graduate of Dartmouth College, Mr Burke went to work for Sears in the merchandise development division. After experience in retail merchandising and as buyer in the Sporting Goods Department he went to the General Merchandise Office as a member of the staff on buying problems. After the war he returned to Sears where he gained added experience in several of the retail stores, leading to his present position.

Members of the Consumer Goods Committee's Executive Committee have been named for 1951:

Mrs Elizabeth S. Herbert, American Home Economics Association, Vice-Chairman

Herbert Bergdahl, American Retail Federation

Ardenia Chapman, American Home Economics Association

Charles L. Condit, Society of the Plastics Industry

Dr Jules Labarthe, Jr, National Retail Dry Goods Association

Margaret Scattergood, American Federation of Labor

Dr Faith M. Williams, American Association of University Women



Mrs. Elizabeth S. Herbert

Vice-Chairman, Consumer Goods Committee, has been made President Elect of the American Home Economics Association

• • **Let There Be Light** is the title of an interesting article in California Safety News, December 1950, aimed to help California industries improve production through the use of proper lighting. "Mere abundance of light does not constitute good illumination," the article points out. To be adequate, it is explained, a lighting installation should meet three main requirements: (1) Enough light for all visual tasks; (2) absence of glare; (3) proper distribution and diffusion of light. In a readable, interesting style, the methods to be followed in order to meet these requirements are discussed.

"What lighting engineers have done through their technical organization, the Illuminating Engineering Society, is to establish certain recommended values, depending on the difficulty of the work," it explains. "Intensive studies of lighting require-

ments have been made for many industries. Recommended practices have recently been published for proper illumination in canneries and for machining of small parts, and similar lighting recommendations are available for other activities. There is also the Recommended Practice for Industrial Lighting approved by the American Standards Association to serve as a general guide on illumination levels."

• • **U. S. Safety Methods Under Study**—Extending the technical assistance program of ECA to protection of industrial workers, the first delegation of European labor, management, and government officials arrived in the United States June 27 to study U. S. safety methods. Seven to ten additional groups are expected to visit this country at two-month intervals under a technical assistance program worked out jointly by the Economic Cooperation Administration and the Bureau of Labor Standards of the U. S. Department of Labor.

Representatives of Norway, Denmark, and Turkey make up the first group. As explained in an interview after their arrival, they are particularly interested in studying techniques of worker-management cooperation for the improvement of safety in work places. Methods of compiling accident statistics will be studied in order that adoption of uniform methods will make it possible to compare the accident records of industries in the various countries.

During its eight-week visit to the United States, the delegation is visiting the American Standards Association, insurance organizations concerned with industrial accident prevention, State departments of labor and their divisions of industrial hygiene and safety, and the National Fire Protection Association. Visits to plants of different types will give first-hand information on how safety programs are carried out. Of particular interest to the delegates are textile and woodworking factories.

The delegates include:

From Norway—Tor Arnevag, Superintendent of the National Safety Council of Norway; Birger Kris-

tofferson, Safety Director, Norwegian Water Power Eidanger Nitrate Company; Olaf G. Ruyter, Labor and Factory Inspector, State Labor Inspection, Norway. *From Denmark*—Erik Dreyer, Director of the Royal Danish Labor and Factory Inspection Services; Gregers Koefoed, Managing Director, Danish Insurance Society; Arne Malver, Inspector, Royal Danish Labor and Factory Inspection Services; Anders Julius Nielsen, Secretary, Danish Federation of Trade Unions; Henning Nielsen, Chief Counsel, Danish Federation of Employers' Organization. *From Turkey*—Suat Seyhum, Safety Director, Turkish Chemical Industry; Fikret Altinel, Research Engineer, Zonguldak Coal Mines.

Accident Statistics (Continued from page 255)

Employee's duties since hiring consisted of inspecting and checking the new equipment being installed in his section.

On Sunday, February 26, this man worked his regular scheduled shift, 3:00 P.M. to 11:00 P.M. During this particular shift he was checking the operation of several pumps and compressors that were being "run-in" at the time.

During the evening the employee complained to several of his co-workers of a pain in his stomach and remarked that he thought it was caused by indigestion, since he had been troubled by this before. He did not make any report of this to his night foreman.

After he went home the pain became worse, so the employee went to his family doctor on the following morning, Monday, February 27.

His doctor examined him and diagnosed his case as a right indirect inguinal hernia.

Employee then called his foreman to notify him of his condition and that he would be unable to report for work on his regular shift, 3:00 P.M. to 11:00 P.M. that afternoon.

Tuesday and Wednesday, February 28 and March 1, were the employee's regularly scheduled days off and his next reporting time was 11:00 P.M. on the night of March 1.

Employee was discharged by his family doctor, reported for work at that time, and has been carrying out his normal duties ever since.

Employee reported to his doctor, foreman, and safety supervisor that he could not account for any specific injury or severe strain that might have caused this illness.

Family doctor's prognosis was that patient has congenitally weak lower inguinal rings, and would probably need hernioplasty on one of the two sides.

From the description presented, the committee believed that there was no clear history of an accident in this case and, therefore, under paragraph 2.2 this case should not be included in the rates.

Book Reviews



Some Theory Of Sampling. By W. Edwards Deming (John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N.Y., \$9.00)

Students of engineering and industrial management who have become acquainted with the statistical approach to control of quality and the design of experiments, will find this book to be a valuable guide in dealing with problems of sampling. The author, a member of the ASA committee that developed the American War Standards on the principles and application of the quality control chart, has a wide practical experience with sampling in the government services, as carried out, for example, by the Bureau of the Census. In recent years he has also functioned as an adviser on industrial applications of sampling. The book is divided into five parts: I. The specification of the reliability required; II. Some elementary theory for design; III. Some theory for analysis and estimation; IV. Applications of some of the foregoing theory; V. Some further theory for design and analysis.

National Fire Codes, Volume III, Building and Construction and Equipment. (National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. \$4.00)

This volume, which supersedes the 1944 edition, presents a compilation of 37 standards as amended to date, on building construction and equipment. Divided into nine parts, information is given on the following topics: life safety from fire, restricting spread of fire, chimneys and smoke pipes, building equipment, building details, occupancy standards and storage, construction operations, and fire tests. A number of standards are included which establish fundamental principles and which although now out of date, are valuable as background for understanding current developments. American Standards published in this volume include the Building Exits Code, the Standard for Places of Outdoor Assembly, Standards for Blower and Exhaust Systems, Protection Against Lightning, Fire Tests of Building Construction and Materials, and Fire Tests of Door Assemblies.

Standards for Healthful Housing, Construction and Equipment of the Home. By the American Public Health Association, Committee of the Hygiene of Housing. (Public Administration Service, Publications Division, 1313 East 60th Street, Chicago, Ill. \$2.50)

"The better planning of dwellings is of profound importance in promoting healthful living, psychologically as well as physiologically. With such planning, accompanied by the modernization of building codes and improvement in building prac-

tices, the ends in view could be attained without substantial increase in the cost of erecting a dwelling." A wide variety of special problems in housing construction and basic equipment are discussed and treated by specialists in the field concerned. Structural framework, heating and ventilation, illumination, noise control, and sanitation are broken down into thirty-two topics and a minimum standard requirement for each has been set. Equipment essential for good housekeeping, safety in the home, and the development of legal and administrative standards for dwelling construction are fully discussed.

Drafting Standards, Aluminum Extruded Products. (The Extruded Products Division of The Aluminum Association, 420 Lexington Avenue, New York 17, N. Y.)

A new manual of drafting standards for aluminum extrusions has been issued "to outline certain basic practices that are necessary to extruded products and, for the first time, to standardize those practices as far as at this time seems practical."

The manual begins with definitions and identifications of aluminum extruded products. Later sections cover such topics as standard tolerances, proper dimensioning, and standard abbreviations. Recommendations on arrangement and lettering of drawings also are given. Single copies will be supplied to individuals in the U. S. and Canada who send in their requests on business letterhead.

Chemical Spectroscopy. By Dr Wallace R. Brode. (American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. \$1.35)

The 1950 ASTM Edgar Marburg Lecture, by Dr Wallace R. Brode, Associate Director of the National Bureau of Standards, discussed the development and use of spectroscopic methods in analytical control. The use of both emission spectra and absorption spectra procedures are outlined and the method limitations indicated. In colorimetry and color description, the application of these methods is considered as well as the use of spectro photometer procedures in infrared and ultraviolet regions of the spectrum. Part of the lectures is devoted to the field of emission spectroscopy, including the development of rapid analysis procedures and the recent advance in photoelectric recording instruments. A somewhat elementary approach has been used so that the subjects can be easily followed, ASTM announced.

Dr Brode is chairman of ASTM Committee E-13 on Absorption Spectra Analysis, and a member of ASTM Committee E-2 on Emission Spectroscopy. He is also a member of ASA Sectional Committees on Standards in Optics, Z58, and Letter Symbols, Y10.

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